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THE UNIVERSITY OF ALBERTA
COMMUNICATIONS IN THE COUNTY OF CAMROSE:
INFORMATION FLOW IN A RURAL AREA

by



SAMUEL TREVOR McCARTNEY

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
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The undersigned certify that they have read, and
recommend to the Faculty of Graduate Studies for acceptance,
a thesis entitled Communications in the County of Camrose:
Information Flow in a Rural Area submitted by Samuel Trevor
McCartney in partial fulfilment of the requirements for the
degree of Master of arts

ABSTRACT

This study is concerned with the ways by which people are linked in a rural area. Communications are carefully differentiated from transport by restricting them to the movement of information rather than people or things. The County of Camrose is shown to present few differential obstacles to such movement because of physical and cultural homogeneity.

School bus services, postal services and the telephone system are investigated as examples of personal media and newspapers, radio and television as examples of mass media. It is shown that time is a doubtful measure of isolation within the area in the case of school buses but that there is great variation in the times taken for postal movements within the area due to deliveries in some areas but not in others. The uses of the mail services are considered. The structure of the telephone system is examined to see the areas within which people wish to be linked and it is seen that the telephone is used much more for local communication than the postal system.

The mass media are found to have very similar trends in so far as use of city based facilities is concerned, with a uniform fall off in reading and listening with distance from Camrose. Daily and weekly newspapers are compared and it is seen that many people accept a considerable time lag between publication and reading. Many people buy daily newspapers only occasionally. Radio and television are found to be major suppliers of news, especially television, though local content is slight.

The conclusion is that the area may be considered to suffer from qualitative isolation in that all means of communications are present but in a somewhat inadequate form.

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INTRODUCTION

The aim of this thesis is to study the methods of communication by non-personal contact in the county of Camrose in their spatial distribution and to see from this whether isolation by space, time or other factors exists within the area or relative to other areas.

Definitions

It is first of all necessary to define the term communications.

Appleton (1962), in the only book specifically setting out to discuss the geography of communications used the following definition:
(p. xvii)

'Communications are the channels by which people or things can be moved between places. The term is often extended to cover verbal and even visual messages, from semaphore to television, but these interpretations will not be dealt with in the present context'

Williams (1968) in a non-geographical study examined the meaning of the word and found that: (p. 17)

'The oldest meaning of the word, in English, can be summarised as the passing of ideas, information and attitudes from person to person. But later, communications came also to mean a line or channel from place to place. . . . I think that for describing the physical means of transporting and carrying, our other word, transport, is better than communications but I suppose both will go on being used'

For the purposes of this thesis Williams' definition is used except that direct communication by face-to-face conversation is excluded i.e. communications using some medium are discussed.

Isolation may be considered in terms of separation by distance or time from a desired or needed commodity. In the case of this thesis

that commodity is information in its broadest sense.

It is often convenient to express distance in terms of time and hence the isochrone is a popular index in geographical studies. Although examples within the field of communications could not be found MacGregor (1953) showed that, in an area close to Edinburgh, time and distance were not directly related, if public transport was used, because of non-connecting schedules. While MacGregor was writing in terms of transport rather than communications, over many areas in the present study the isochrone will be seen to be inapplicable. There is a deliberate attempt to equalise travel time over the whole thesis area for school buses. Because of the presence of mail delivery in some areas but not others, the postal service is not amenable to investigation by isochrone, yet isolation exists. Telephones and broadcasting involve instantaneous communication yet isolation may exist. Therefore, other types of isolation than separation by time, are considered.

Scope of Study

The major reason for undertaking the study was that there has been no attempt to study all the communications in a given area. Also it seemed that by not considering specific areas it was easy for technological advances to be accepted as improving communications in all areas when in fact they might make little difference in a rural area.

The media under consideration in this study are, school bus services, postal services, telephones, newspapers, radio and television. All are obviously communications media except for school bus services which require some explanation. They are included because they may be considered the medium between the source of information, the school, and the recipient. Telegrams have been excluded because

they are relatively little used by private individuals as a result of the almost universal availability of telephones.

They are considered in the following order: personal and then mass media. School bus services, postal services and telephones are personal media i.e. the content is dictated by the user and is different for all cases. The mass media, newspapers, radio and television, have the same content for all. Another difference is that personal media are statutory provisions. All school children fulfilling certain locational conditions are entitled to school bus service, postal services are a right of all, telephones are to be provided as a matter of provincial policy for all who want them and can afford the nominal installation charge. The mass media are left to private enterprise with the exception of the Canadian Broadcasting Corporation and the choice is completely a matter for the individual.

The different uses of the media are considered because this may be a reflection of isolation. For example, in a rural area the mail is often used for newspaper delivery while in urban areas this is unusual. The uses of radio may vary from place to place. The number of telephone calls, the member of a family who makes them, and the uses of the telephone may vary from place to place and are therefore investigated.

Previous Geographical Work

Williams' study (1968) related almost completely to the British Isles but he did not make any spatial comparisons and hence the study was of relatively little geographical interest. McLuhan (1964) includes most media but does not examine spatial patterns.

Among geographers two main groups may be distinguished, those who studied communications media in themselves and those who studied them as parts of larger studies or used them as indices of other phenomena. Some examples are discussed below.

Innis (1953, 1954, 1960) discussed the distribution of radio and television stations with respect to population in Canada, the United States and for comparison in less detail, the rest of the world. He restricted himself to these media alone and did not compare them with others. Ajo (1962) examined telephone call markets in Finland. Cotcher (1948), though an engineer, studied the geography of radio station location with respect to signal patterns in Boston. Haughton (1950) examined newspaper sales areas in Ireland, again not relating them to any other media. Robertson (1952) made one of the few attempts to relate the geography of different media but he worked on a world-wide basis and so his examination was somewhat superficial.

Among these studies of communications per se one common factor is the reliance on published data or information acquired from the agencies investigated. There is no investigation at the level of the individual user of the media.

The second group of geographers have often been concerned with defined regions and have included the media on the principle that reading a newspaper, or listening to a radio station indicates community of interest. Smailes (1947) used newspaper circulation areas as indices of urban fields as did H.L. Green (1955) in his investigations on hinterland boundaries in the United States. F.H.W. Green (1953) used country bus services as indices of community of interest

in Europe though he was not considering school bus services as such and so his ideas may be classed as transport rather than communications. Likewise Brush (1956) used bus services as one of his indices of service function. Vallega (1966) used numbers of mail items and telegrams as indices of the extent of service industry on a world wide scale. Hardwick (1967) examined the relationship between national consciousness and television viewing habits on the Canadian U.S. border. Like the previous group these geographers look upon the media as funds of untapped data (which are often not made generally available) rather than spatial phenomena to be the subject of individual investigation.

Within the thesis area, Anderson's study (1967) used a scheme for tracing economic activity of small centres by using post office revenues but he did not investigate the postal services themselves. Rendall (1962) mapped the percentage of persons throughout the area subscribing to the Camrose Canadian weekly newspaper but as will be seen later the method had deficiencies. He also examined the location of telephone exchanges and some of the linkages in the area, but made no attempt to study the complete communication system.

Thus there is no real precedent to guide this study of communications in total within an area and so it is realised that there are deficiencies in the investigation. But it hoped that, by shedding some light on the form and function of information flow, some contribution will have been made to understanding the problems of a rural area.

CHAPTER I

BACKGROUND TO THE AREA AND SURVEY METHODS

Location

The County of Camrose is located at the western margin of the Interior Plains of North America in the open aspen-poplar parkland belt. It is an administrative unit of the Province of Alberta with a total area of 841,546 acres (1313.3 sq miles). The city of Camrose, 46 miles south east of Edmonton, lies totally within the county but is independent and is not part of the thesis area.

The location of the county is shown in Fig 1.

The maximum north-south length of the county is 55 miles and the maximum east-west extent is 33 miles.

Physiography

The generalised relief is as shown in Fig. 2. Most of the higher areas in the northwest and southwest are hilly end and dead ice moraine, while the more low lying areas to the east are flat to undulating ground moraine.

The Battle River valley, which traverses the area from northwest to southeast is a glacial spillway of former Lake Edmonton, is occupied by Driedmeat Lake for some 20 miles. The valley of Meeting Creek is of similar configuration i.e. a maximum of 200 feet deep with a flat floor and steep sides.

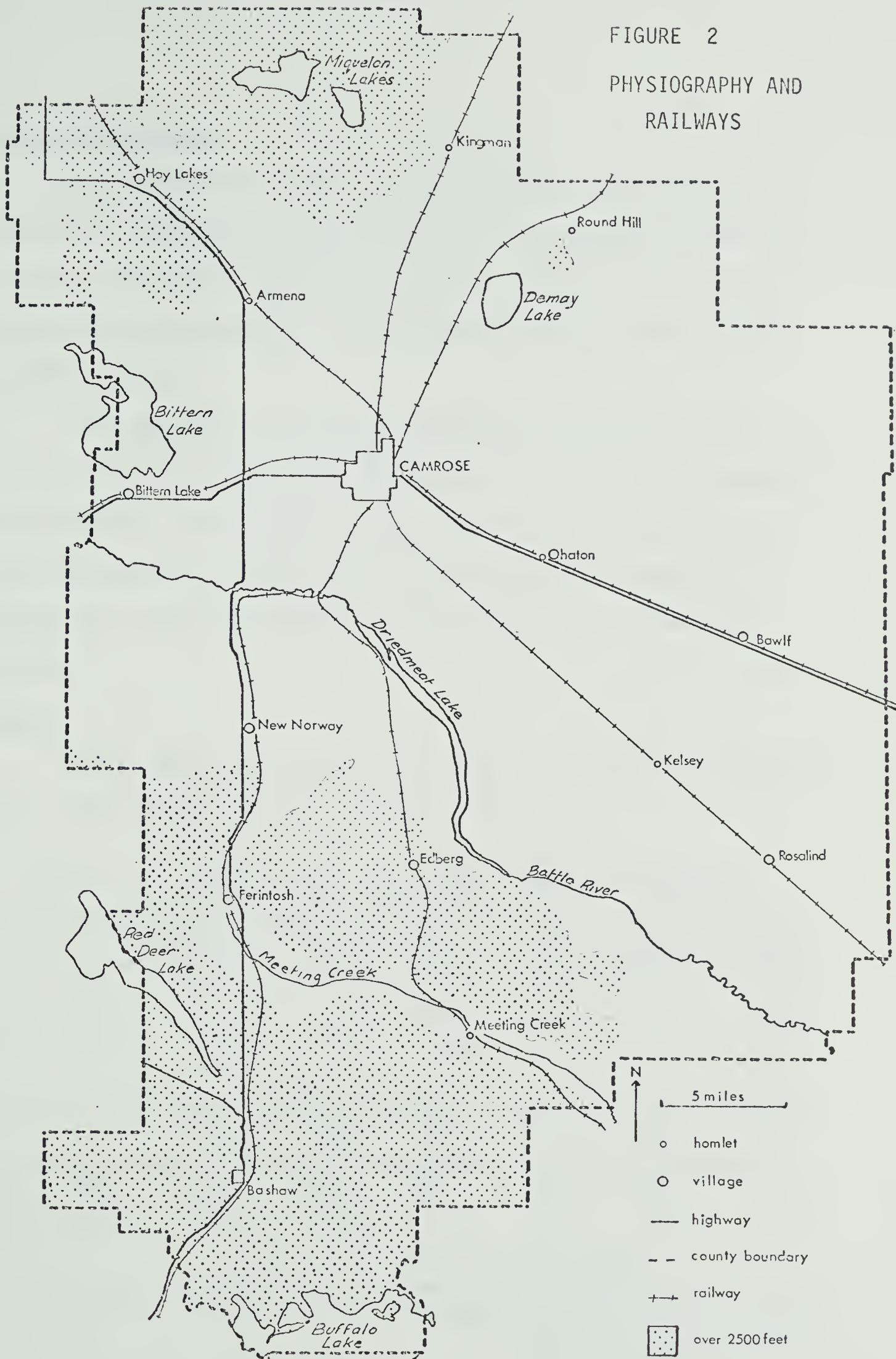
Other lakes in the area include Miquelon Lakes, Bittern Lake, Red Deer Lake and Buffalo Lake. They, along with the many minor lakes and sloughs, are all declining in area, a trend since the early 1900's.

FIGURE 1

LOCATION OF THE
COUNTY



FIGURE 2
PHYSIOGRAPHY AND
RAILWAYS



Soils and Vegetation

Most of the area is black soil (chernozem). It is among the richest in the province and is suitable for grain growing though some rotation is advisable to preserve fertility. There is some dark grey wooded soil in the northwest and around Miquelon Lakes which is less suitable for grain.

The vegetation at the time of original settlement was the open parkland noted above which caused little obstruction to movement. Very little tree cover remains except on some of the steeper slopes in the northwest and southwest and occasionally trees remain as shelter belts around farm houses, though some of these have been planted.

Climate

The 30 year mean monthly temperature and precipitation figures (1931 - 1960) for Camrose are as shown in Table I.

TABLE I - MONTHLY MEAN TEMPERATURE AND PRECIPITATION

	Jan	Feb	Mar	Apr	May	June
Temp. (°F)	3.5	8.0	19.8	38.3	51.1	56.9
Precip. (ins)	0.73	0.54	0.68	0.99	1.58	2.53
	July	Aug	Sept	Oct	Nov	Dec
Temp. (°F)	61.8	59.4	50.6	39.4	23.5	11.4
Precip. (ins)	2.74	2.28	1.29	0.71	0.66	0.59
Total 15.32 inches						

Source: Canada, Dept. of Transport
Monthly Record of Meteorological Observations
Jan - Dec 1968

As can be seen five months have mean temperatures below freezing and for 1968 four of these had minimum recorded temperatures below zero Fahrenheit, including one of -37°F . In that year snow was recorded in January, February, March, April, November and December with most in January (9.8") and December (14.8").

Farming

Most of the farms in the area are about three quarter sections in size. A map prepared by the Battle River Planning Commission (1967) showed that of 40 townships totally or partially within the area, six had an average of one family per half section, 19 had one family per three-quarter section and 15 had one per 1000 acres. However, the county report listed 2600 farmers which would mean each farm averaged 315 acres, but this would include a father-son partnership as two farmers.

Apart from the areas of less fertile soil noted above, and the more hilly lands of the northwest and southwest where machines cannot operate so successfully and where fields are sometimes broken up by sloughs, the exact balance between grain and livestock on a farm is largely a matter of personal choice by the farmer. Interviewees noted that a livestock farmer is tied to his farm all the year, which many dislike, and also that there are quotas on milk sales. While a half section farm (320 acres) is said to provide just adequate income in livestock, three quarters (480 acres) is said to be the absolute minimum in grain and this minimum acreage in grain is increasing rapidly with the decline in wheat prices. In general wheat increases its proportion of land use towards the east though farmers do not consider

that the prairie starts until some 20 miles east of the thesis area.

Population and Settlement

Settlement in the area includes the town of Bashaw, the villages of Bawlf, Bittern Lake, Edberg, Ferintosh, Hay Lakes, New Norway and Rosalind. There are also the hamlets of Armena, Kelsey, Kingman, Meeting Creek, Ohaton and Round Hill. The former hamlets of Demay, Dinant, Dorenlee, Duhamel and Kiron are now extinct, in the whole area including the town of Bashaw.

Population fell from 10,783 in 1961 to 10,243 in 1966 a drop of 5.0%. In the unincorporated areas the fall was from 9041 to 8285, i.e. 8.4%, and in the villages from 1128 to 1039 i.e. 7.9%. Some inconsistency is caused by the fact that Rosalind became a village in the intercensal period and had a population of 222 in 1966.

Bashaw showed a rise in population in the same period from 614 to 697 i.e. 13.5% and much of the rest of the population leaving the rural areas may have gone to Camrose, whose population rose 17% from 6939 to 8362 in the same period.

All the above figures were taken from the 1966 Census, Vol. 1, Population.

Population densities within the area range from 148 per township to 325 per township. These include unincorporated settlements which exaggerate differences. Although rural depopulation has been a feature over most of the rural areas of the county since the 1930's, no large areas are completely depopulated (Battle River Planning Commission, Map 5). Wood (1967) noted that many persons of Swedish origin returned to Sweden during the depression.

Most of the history of the area is covered by 'The Golden Trail' (Camrose Canadian 1955) and 'The Early History of Camrose Alberta and District' (Camrose Historical Society 1947). The following discussion is derived from these sources unless otherwise stated.

The first settlement in the area was of Metis in 1875 at Duhamel, where a Roman Catholic missionary church and school were built. No further record remains of these people. The first white settler in the area was the telegraph operator at Hay Lakes, the terminal of the transcontinental line. He arrived in 1876 and the office was located on the Battleford Trail, the main cart route, which the line followed. The first agricultural settlement did not appear in that area until 1902.

The first influx of white agricultural settlers began after the building of the Calgary to Edmonton railway in 1891 by the Calgary and Edmonton Railroad Company. The main entry was via Wetaskiwin and the first people settled in Bittern Lake where their descendants still farm. By 1894 settlement was as far east as Heather Brae, a now defunct settlement south of Ohaton. The Canadian Pacific Railway organised excursions of farmers from the United States to see the land and to choose homesteads. The railway hoped to profit by selling their land and by transporting the crops, and they preferred to deal with farmers who were already used to North American conditions, rather than immigrants from Europe.

The history of the area dwells at length on the fact that many of the settlers in the area were of Scandinavian origin. Many of these people came from the United States, especially Minnesota,

Nebraska, the Dakotas and Kansas, where their farms were uneconomically small and where the agricultural depression of the 1890's made farming unprofitable. Also, in the area Scandinavian surnames are very common and the area is referred to by postal officials and others as a Scandinavian area. Camrose is the chief centre for cross country skiing, a Scandinavian sport, in Western Canada. Wood (1967) examined the distributions of Norwegians, Swedes and Danes in nine townships near Camrose and found that, due to intermarriage among Scandinavians and other ethnic groups, the originally solid blocks of Norwegians had broken down. He noted that the Scandinavians were forming an increasing proportion of rural dwellers.

The exact proportions of Scandinavians are examined below for 1961, the latest census for which such information is available. In 1961, 30.5% of the County population was of Scandinavian origin compared with 30.2% of British origin and 20.1% of German origin, the next largest ethnic groups. The Slavs are not listed as a distinct group in the census but Ukrainians only made up 4.2% of the population almost completely in the north east as seen below. Altogether Scandinavian, British and German ethnic origins account for 81% of the population and locally it is considered that there are no longer any major social differences between people of these origins. Scandinavians and Germans find less difficulty, in general, in learning English, than Eastern Europeans whose original languages differ greatly from English in structure and even in type of script used (Cyrillic rather than Roman). Also Scandinavian, British and Germans have similar religious affiliations.

In Canada, with British the major ethnic group, areas are described in terms of the next dominant group. Thus the thesis area is often characterised as Scandinavian though this does not in fact mean that the majority of the people are of Scandinavian origin.

Language differences can form communications barriers but only 25.3% of the people in the area listed languages other than English as their mother tongue in 1961. As the definition of mother tongue is the language first spoken as a child and still understood, rather than the language normally used, this factor is unimportant in the area. French, the second official language is spoken by only 43 people in the county and thus is of negligible importance.

Only 18.6% of the population were foreign-born in 1961, a total of 2007. Of these only 228 had entered later than 1946. Thus it is likely that many of those listing languages other than English as their mother tongue were old or had been brought into the country as children. Many of the former may have died by 1969 and of the latter most would be fully Canadianised.

Thus the area may be considered socially and linguistically homogeneous and the ethnic differences are so slight as to be ignored as communications barriers.

Settlement preceded the railways in the area. By 1902 all the quarter sections were taken up to a distance of 15 miles east of Bawlf, in spite of the fact that the C.P.R. line did not reach Camrose (then known as Sparling) until 1905. New Norway had a general store in 1904 but no railway until 1909. Armena had a school in 1897 (when it was called Thordenskjold) though the railway was not built until 1911. As

long as there was reasonable expectation of a line, an area could be settled even if there was considerable delay (though many early settlers moved out because of difficulty in transporting their crops). Edberg and Meeting Creek could not be connected to Camrose until 1909 when a very long trestle bridge was built over the Battle River at Duhamel. Ferintosh and New Norway were not linked to the north by rail until 1922 when that bridge was abandoned and a new route chosen.

The influence of the railways can be seen in the case of Ros-enroll, which was a prosperous village two miles south of Bittern Lake on the anticipated Wetaskiwin to Camrose route. When the line passed north in 1904 it was hoped that a spur would be built. Hope of this was abandoned in 1909 and the village simply broke up, in spite of having stores, a creamery, a school, churches and a telephone exchange. Several buildings were moved to Bittern Lake.

The last railway built in the area was that to Tofield, passing through Demay and Round Hill in 1921. This line was delayed considerably by the First World War and as a result the main influx of settlers from the United States bypassed the area and left the land open for Eastern European immigrants from northeast of the county. Round Hill had had a shop for some time serving the Battleford Trail, on which it was located, and a local coal mine.

Conclusions

The area is almost totally homogeneous with respect to opportunities for communications. The valleys of the Battle River and Meeting Creek have not, for some time, with the development of efficient motor transport and general road improvements, formed any significant

obstacle to postal and school bus services. They did not form much obstacle to original settlement as most settlers moved in parallel to the valleys, and, in fact, there was, in the period about 1900 - 1905 considerable raft traffic for movement of settlers' effects, on Driedmeat Lake. At that time the water level was much higher than at present due to a series of wet years, and the navigable channel extended up Pipestone Creek to Gwynne, 17 miles west of Camrose.

The lake is of relatively little importance as postal services are centred in Camrose. It is used as a boundary for school districts but it is only a hypothetical barrier in that there is little reason for people to want to cross it in any case.

There are no large hills or rock outcrops to disrupt radio and television.

The climate is no longer an obstacle to communications with the improvement of motor oils and cooling systems which permit vehicles to run with a minimum of trouble even at very low winter temperatures. Snow is no longer an obstacle with the full organisation by the county of snow-ploughing, especially on school bus routes. While there is often deterioration of road surfaces in the spring melt period this is seldom enough to stop movement. However, a regional road report (Battle River Planning Commission 1967) notes that there are too many roads in the area for the amount of traffic and that the effort expended in keeping them in mediocre condition would be more profitably used in building fewer but better roads.

The burial of telephone cables has eliminated icing troubles, though delays due to breakdown in winter were seldom as long as in the

summer when few people could be spared from harvesting to repair damage.

Homogeneity of population in terms of time of arrival in the area, ethnic background over a large part of the area and now the English language means that there are no social barriers to communications or different linkages with places outside the area. Wood (1967) noted that the original solid blocks of Norwegian and Swedish settlement in the Camrose area have largely broken up, though the percentage which they form of rural dwellers has actually increased slightly. This was because many Swedes emigrated back to Sweden during the Depression and the rest have shown no tendency to marry exclusively within their ethnic group.

Most of the people only speak English and only three encountered during fieldwork had traces of foreign accents. Only one person interviewed was a recent immigrant (1954) and he was of the opinion that land costs would make immigration to rural areas impossible for Europeans.

The development of the area during a short period by most of the railways resulted in an even spacing of nucleated settlement so that few places can be considered particularly isolated.

Thus the area can be considered a fairly close approximation to a uniform plane in social and economic, as well as in physical terms. This means that generalisations can be made on a basis of distance without having to use weighting factors (though for strict accuracy isochrones of the shape discussed in Chapter 2 would have to be used). The fact that Camrose, the main trade and administrative centre, is

almost centrally located, also helps in this respect.

The Survey

Initially it was decided to gather information for this thesis by interviewing a random sample of people in the area. The reasons for using interviews rather than a mail questionnaire were intuitive rather than being based on any theory. It was felt that more accurate answers could be obtained face-to-face and that supplementary questions could be asked to shed light on answers which seemed unusual. It was also felt that interviewing would provide information on general attitudes in the area towards the rest of the country and the world, and also some insights into local problems, all of which would help in evaluating data. Travel involved in interviewing also would give an opportunity to see the whole thesis area.

A major difficulty arose in finding a suitable sample frame. A random sample seemed desirable, firstly because it would eliminate the effects of different population densities but secondly because, if a systematic sample was chosen using, for example, farms at the corners of townships, they would all have similar local accessibility (which would be greater than those in mid-township). Because many features such as school bus services, telephone services and mail deliveries are of necessity the same throughout small areas, a cluster sample was thought to be inappropriate.

A simple random sample of quarter sections is inappropriate because most farms have an area of at least two quarter sections and many are larger so that most of the random sample would have no houses.

The most easily accessible lists of persons living in rural

areas are the post office household directories. However, these do not list the actual locations of the houses, merely the post offices which the householders patronise or the rural route on which they are located.

Provincial electoral registers were stated by the office of the Attorney General to be erratic, some listing location and others mailing addresses only. County tax rolls indicate ownership of land but not location of dwelling and are therefore unsuitable.

At the suggestion of the Assistant Secretary Treasurer of the County Council in Camrose, the Homeowners Current List for the county at the Department of Municipal Affairs in Edmonton was used as a frame. This is drawn up in accordance with the Householders' Tax Rebate Act of 1966 which grants \$50 per year to all householders who have paid their Municipal Taxes. The householders are each entitled to only one payment so that several houses on one parcel of land only result in one entry in the list. As the basis is ownership, any persons renting their houses would not appear on the list but local officials knew of no examples of rental of farm houses and thought that it was extremely rare in villages and hamlets.

The fact that a person could only appear on the list if taxes were fully paid would seem to exclude tax evaders but the County Authorities were confident that they had collected all taxes due to 1966 and hence the list was complete.

The list for the county included 1650 names on isolated sites but including hamlets and other unincorporated places. Homeowners in towns and villages are listed separately.

Sample Size

A sample size of 100 was chosen. This number was somewhat arbitrary. Firstly it seemed likely that this number could be located and interviewed in about five weeks, the time planned for field work. Secondly, it was thought that some percentages might be required and that 100 would facilitate calculations. Thirdly, a representative of the Dominion Bureau of Statistics gave his opinion, in a telephone conversation, that for the type of study being carried out, and with a predominance of limited choice responses, 100 would be quite an adequate number. He noted that the limitation of choice drastically reduced the numbers required and that lack of cross correlation also reduced the requirements though this had to remain a rule of thumb.

Thus the sample size was about 6.1% of the householders of the county. One hundred random numbers between 1 and 1650 were chosen and the names and locations taken from the list. When a number coincided with a location in a hamlet, which was identified by a lot number, it was ignored and a new random number chosen as a replacement. There was no theoretical reason for ignoring hamlets but there is difficulty in identifying lots in the actual survey.

The Questionnaire

The questionnaire was drawn up as shown in Appendix B. Several points were borne in mind in its construction.

a. Brevity. It was felt that a short questionnaire would result in a better response than a long one because people would not be prepared to talk for long. Also it was felt that only a limited amount of material could be tabulated conveniently and thus a long

questionnaire would result in waste.

b. Few Choices. Wherever possible questions were chosen so as to be suitable for yes/no answers. Where this was not possible the range of choice was kept small. Some open ended questions were included in the case of radio stations and newspapers but it was anticipated that the range of response would be fairly small.

c. Personal opinions. Questions attempted to find information not already covered by government or other data for the area.

d. Other Information. Such data as ages and earnings were avoided. No hypotheses were contemplated in which this information would have been useful, but also because they might arouse antagonisms.

e. Format. The format was made simple and the questions brief so that the questionnaire could if necessary be sent by post as well as being used as an interview schedule.

Moser (1967) and Jackson (1963) were consulted on survey and questionnaire design. Moser (p. 212) pointed out that '. . . knowledge of the survey population and subject-matter, common sense and past experience are at present the surveyor's main tools'. Stephan (1963) noted that the lack of publication of methods and difficulties of surveys had made it impossible for a set of rules to emerge.

Thus it seems that common sense is the best method of choosing questions and format.

Pilot Survey

In the case of this study no formal pilot survey was carried out. However, part of the information on post offices could only be

gathered from postmasters and this was taken as an opportunity to discuss the locality fully and the possible format of the questionnaire. This study was carried out during the postal strike of the summer of 1968, and, while rural services continued to a greater extent than those in cities, the postmasters had more time than usual to spare. They were all extremely cooperative, and, coming in contact with almost all the people in their areas, they were able to suggest the possible responses to different questions. They were also able to suggest suitable times for visiting and the likelihood of people not being at home.

The Interviews

The interviewing started in October. This was well after harvest time and many respondents noted that an earlier survey would have found them less cooperative. They also noted that a later survey would have found fewer at home because of curling, which becomes popular in January.

All 100 locations were visited and 50 persons were approached for interview. There was no response at the others either because no one was at home or no one came to the door. Of the 50, three refused because they had been approached by persons claiming to be making surveys but who had subsequently sold them fraudulent magazine subscriptions. Battle River Planning Commission verified that this was a localised problem and that nothing could be done about it as most of the vendors carried ostensibly valid identification. Of those who refused, one was the householder's mother who thought her English was inadequate, another was washing clothes and did not wish to be dis-

turbed then or later, another was cooking, another was just going out and did not wish to wait and another decided halfway through that the interview was a waste of time. Forty-two gave complete interviews and many discussed their answers, and other issues raised, at considerable length.

At this point it is worth noting that only two persons showed any signs of resentment at being asked questions, and the rest were extremely courteous even when they declined to answer. Only one passed any comment on the interviewer's beard and he still answered all the questions.

All the sample had been visited once by mid December and it was decided to suspend activities until after Christmas as so many people were not at home because of shopping. It had also become rather cold for doorstep or farmyard interviews.

It was intended to resume interviewing after Christmas but a long period of extremely cold weather, made this undesirable. To prevent delay in research it was decided to acquire the rest of the sample by mail questionnaire.

The Mail Sample

A new frame was necessary for mail sampling as the Homeowners Tax Lists did not include postal addresses. The post office Householder Directories (1967) for Battle River, Vegreville and Wetaskiwin were used. As the post office service areas did not correspond exactly to the county it was necessary to include such peripheral post offices as New Sarepta, Daysland and Donalda. A total of 3218 were listed and a random choice of 170 was made i.e. about one in nineteen.

Also an extra seven names were chosen at random from the county land ownership map in the immediate vicinity of Camrose as a sample of the 130 general delivery patrons of Camrose not listed in the Post Office Directory.

The reason for choosing this number was that a maximum usable return of about one third was expected, and this would raise the total to about 100.

A covering letter, as in Appendix A, was enclosed with each questionnaire and stamped addressed envelope.

The response was, 53 completed returns, and 36 incomplete because the respondent lived outside the county, or had moved, or could not be traced. Also four were received after the four week deadline. This response came very close to that desired i.e. about 31.5% usable.

The distribution of interview and mail respondents is shown in Fig 3.

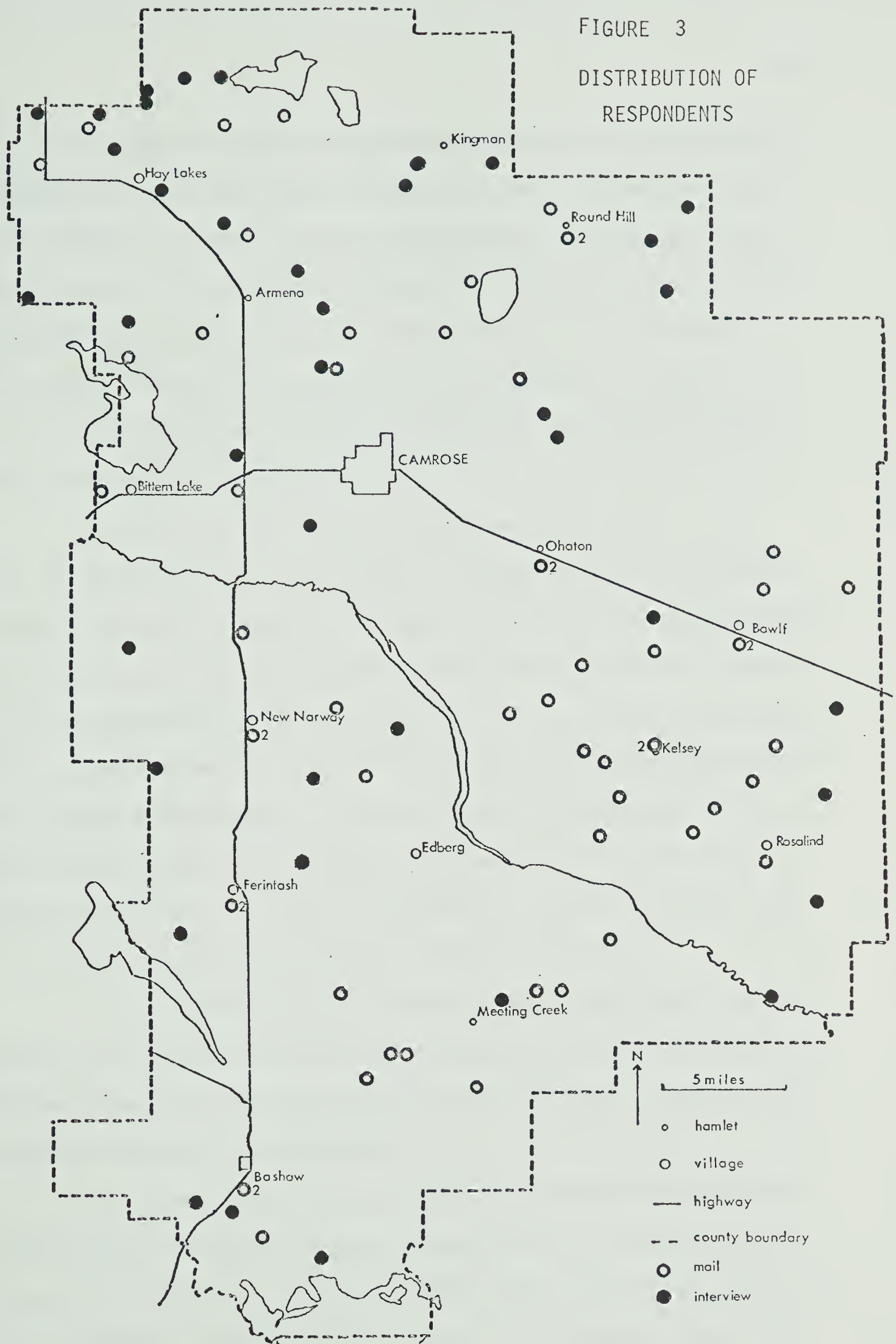
A Critique of the Survey Method

1. The interview method was useful in that a considerable amount of background information was acquired which could not have been done otherwise. In this sense the time and money expended may be justified.

2. Probably it would have been worthwhile to have left interview schedules at houses where no one was at home with instructions and a stamped addressed envelope. This might well have been frustrated by the lack of letter boxes on most farm buildings and doubts about opening doors because of dogs.

FIGURE 3

DISTRIBUTION OF
RESPONDENTS



3. The mail sample frame was much larger due to the impossibility of separating hamlet, village and town addresses from the rest. However, as these had only been excluded from the interview study because of navigational difficulties there was no objection to them per se, and any differences between scattered and nucleated settlement responses have been noted in the appropriate chapters. Also, in spite of the name 'Household Directory' the names are not always restricted to householders.

4. The use of two types of response to one questionnaire made it self-checking, up to a point. However, there was a considerable difference in response between interview and mail questionnaires with respect to rural mail delivery. While 12 out of 42 i.e. 28.6% interview respondents had it, 20 out of 53 i.e. 37.7% mail respondents had. As only 39 of the latter lived outside nucleated settlements and were eligible for delivery a total of 51.3% of those eligible had it. This difference may be significant in showing that those with delivery are more likely to reply to questionnaires (possibly because they do not have to make so much effort to post the reply).

5. It is possible that a higher response would have been obtained to a questionnaire designed specifically for mail use with more detailed answering instructions but this would not have produced data comparable with the interview data.

6. Biases may have been introduced by lack of follow-up on those who did not respond to mail questionnaires or who were not at home for interviews. In the case of the latter there did not seem to be any pattern of non-availability except for a slightly higher fre-

quency close to Camrose, and this is unlikely to have been significant because only two or three people were involved. In the case of mail questionnaires, follow-up letters undoubtedly provide more responses.

Mayer and Pratt (1966) carried out such an investigation with two follow up appeals and found that

'From the standpoint of increasing the accuracy of aggregate estimates of known characteristics in this study, the incremental cost of the last two appeals to respondents does not appear to have been justified by a concomitant reduction in non-response bias' p. 641

Thus the best technique seems to be a matter of opinion.

The rest of the information was acquired by interviewing officials and examining official documents. In this respect there was considerable variation of cooperation, most being obtained from Camrose County Council and the Post Office in Edmonton. Information from Alberta Government Telephones was of doubtful accuracy on several occasions. The study could not have been completed satisfactorily on a basis of the sample questionnaire alone.

Conclusions

The survey seems to have been adequate in terms of accuracy and amount of information obtained. The interviews were perhaps rather expensive but some information was thus obtained which would not have been available without a much longer mail questionnaire. The use of two methods seems justified but a larger sample could have been taken for the mail questionnaire which might have made map patterns more apparent though not necessarily more accurate. In view of the homogeneity of the area conclusions derived from both types seem valid.

CHAPTER II

SCHOOL BUS SERVICES

With the formation of consolidated schools in the second and third decades of the 20th century, education in many areas of North America began to move away from the dispersed one roomed school with one teacher. This was by no means a uniform process and such schools persist to the present day in some isolated areas. But, in general, school transportation became necessary and was made a legal requirement because school areas became too large for children to walk to school. Educationalists' attitudes towards transportation have varied from that of a necessary evil, secondary to the educational process, to an accepted part of the communication process.

Quantitative data for the whole of Canada is scanty but by 1962 663,000 pupils were transported at a cost for the year of \$53,214,000 (Canadian Education Association). No estimates of mileage travelled are available, but extrapolating from Albertan data, which may or may not be comparable to the whole country, the mileage could be about 150 million miles per year.

In spite of these great costs and mileages and the high degree of spatial organisation required, geographers do not seem to have taken any interest in school bus services, or indeed any aspects of the geography of education.

The Geographical Literature

McCune (1968), in a recent plea for more investigation into the geography of education, noted that 'Education is increasingly an import-

ant activity of mankind. Yet geographers have paid surprisingly little attention to the spatial quality of the activity.' This chapter does not attempt to discuss the complete geography of education even for such a relatively small area as the County of Camrose. He also noted that 'Geographic patterns of education in rural America have been profoundly changed by the organisation of consolidated schools and the introduction of bus transportation', thus isolating transportation as a major feature worthy of geographical study.

Other geographical writings on the subject are meagre. Eisen (1948), writing about educational land use in an area of about 270 sq miles, discussed the school bus system. She noted the relative numbers of children walking and riding the bus to each school but was not greatly impressed with the bus service because of the great disparities in loads carried and the variety of times at which children had to leave home in the morning and return at night. From her map of the routes it is apparent that the road system, because of the presence of the shores of Lake Erie, does not follow a regular grid pattern. Also the school bus routes tend to be short and each bus makes several trips per day, presumably because of high population density. She expressed general dissatisfaction with school location, largely because of new settlement in the area.

Eisen's paper deals with an area and circumstances so different from that covered by this thesis that it gives little true basis for comparison but it does make clear the intimate relationship between school location and the bus service.

Philbrick's study (1949) of the geography of education in

two communities in Metropolitan Chicago is of little relevance as it deals with urban schools with no transportation service.

While Smailes (1966) included the catchment area of a large grammar school in his study of the urban field of Ballymena, N. Ireland, he was referring to the area from which pupils travelled to the school by private or public transport but not by school buses which were not provided.

Trewartha (1943) noted that a school was a function around which a hamlet could grow, but although he was dealing with the United States, where school buses were common at the time of writing, he did not mention their influence on catchment areas.

Clawson (1966) discussed the features which would have to be investigated to try to predict the optimum future rural settlement pattern in the U.S.A. - settlement pattern being defined as 'where people live in relation to their work, their school, their place of play etc'. He noted that minimum size, cost of buses, and effect on extracurricular activities were all factors in school location, but did not elaborate. He also stated that road travel per capita was about 6000 miles per year in 1966 but did not state whether this included school bus travel. It seems quite possible that it did.

Geographical studies of the area under consideration in this thesis: Other geographical studies of the thesis area by Anderson (1967), Rendall (1962) and Donaldson (1965), note the existence of schools but do not discuss their catchment areas nor their bus services.

It is thus necessary, in view of the lack of studies by geographers, to examine some of the studies by educationalists.

Educational Studies

There are many articles about school bus operation in the educational journals but they chiefly relate to the United States and involve discipline, bus driver training, vehicle inspection and standards, rather than the planning of routes and their desirable features.

Wimbish and Gilbert (1960) noted that, if roads are dangerous for walking for any reason, there must be pickups within the area normally considered within walking range of the school. They also note that on busy roads, stops should be held to a minimum because the disruption caused to other traffic may create exasperation among motorists leading to a net loss in safety. This is the aspect of planning which seems to be a chief preoccupation.

Butterworth (1949) discussed scale economics in school district size but never defined 'large' and 'small'. He noted, however, that scale economies in maintenance could well be absorbed by increased administrative costs.

The two articles above are indicative of the standard of much of the education literature. It is hard to see what purpose they serve.

Belknap (1951 and 1957) included some more geographically relevant information in some articles on transportation. In 1951 he suggested that the minimum daily mileage of a bus should be 40 miles. He also suggested that loop routes, starting and finishing at the school, should be used wherever practical. In a later article (1957) he elaborated and stated as a rule-of-thumb that 30 miles per hour and one minute per stop was a reasonable estimate of school bus speed. He

proposed that 30-45 minutes was a reasonable travelling time and that one hour was the absolute limit. He found it necessary to advise the use of maps in planning routes, which suggests that some administrators must have little idea of the extent of their task.

Lambert's book (Lambert 1938), while it was written in 1938, still seems to be the only detailed theoretical consideration of school bus operation. He lists the forces which caused the growth of school bus services in the United States:-

1. The decline of a pioneer theory of education and the rise of a desire to provide an improved educational opportunity to children of urban, semi-urban and rural areas alike.
2. Enlargement of the geographic unit used for local administration of public education and its financial support.
3. Modification and extension of the boundaries of school attendance areas.
4. Popularization of secondary education.
5. Growth of good roads and highways.
6. Wide use of motor vehicles by all classes of the population.
7. Increased confidence in the comfort and safety of vehicles used to transport pupils.
8. Changes in the rate of increase in the general population in the last three decades.
9. Efforts of government to solve the problem of over-colonisation of submarginal lands.
10. The tendency for wealth to concentrate personally and geographically.
11. The increased mobility of the population and whole social movement for the improvement of rural life.' (p.1-2)

With a few minor word changes and the substitution of 'Rapid increase of school population following World War II' for point 8, these reasons are quoted (unacknowledged) by Skuba (1965) in his study of school transportation costs in Alberta in the 1960's, as the reasons behind the growth of bus services in Alberta.

Lambert's study above is especially relevant to a geograph-

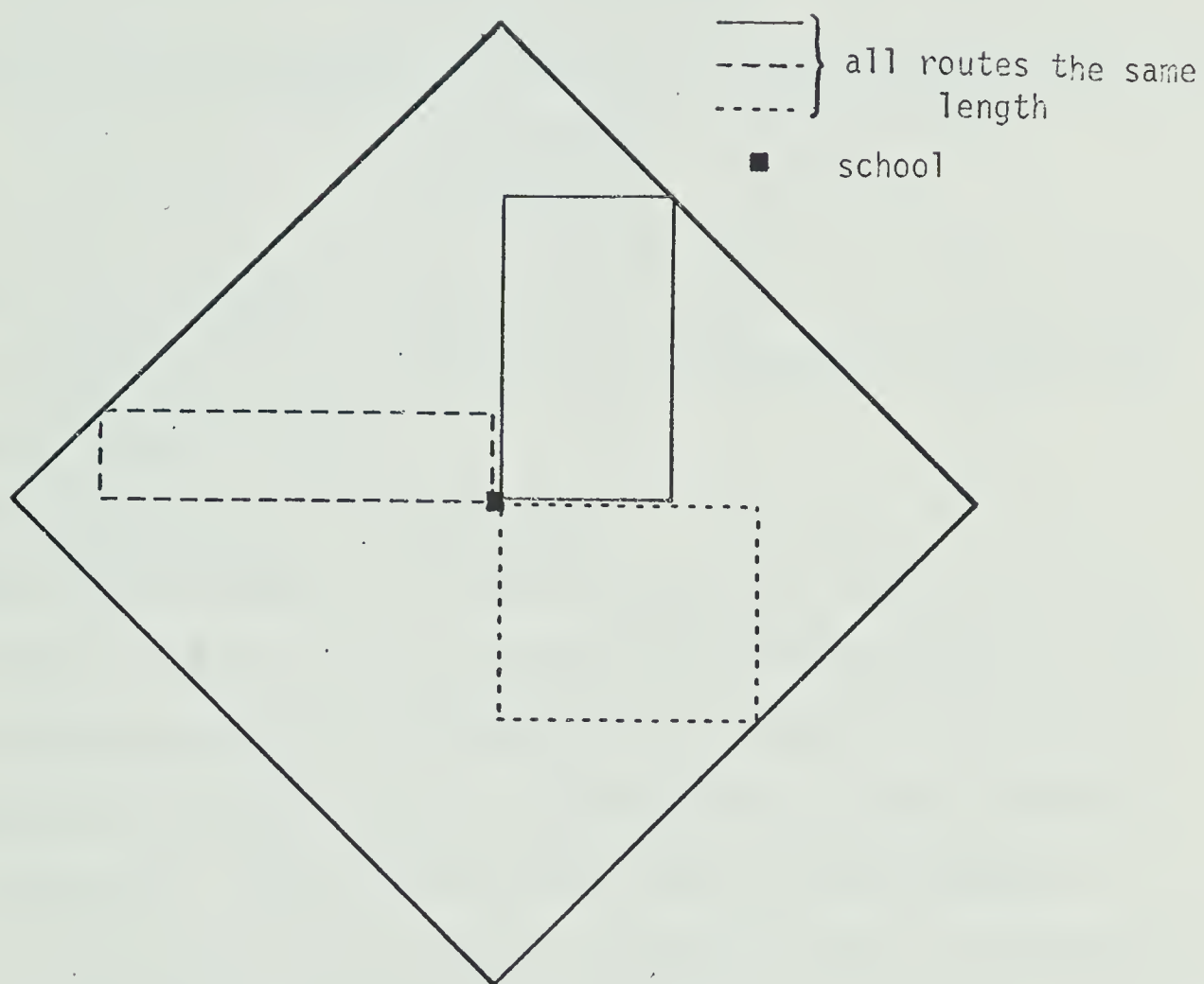
ical analysis because his approach is, in many ways, that of the theoretical geographer. Discussing the theoretical area served by a school he observes (p. 24) that 'Assuming a more or less even scatter of population over the land and travel dominantly radial, that is, following lines like the spokes of a wheel, the attendance area will tend to be circular in shape. If travel is strictly or dominantly rectangular, that is, if it follows lines like those of a checker-board, the boundary of the attendance area (under any given maximum walking distance) will tend to be that of a square laid about the school plant at a 45 degree bias to the lines of travel that intersect the plant at right angles'. That this model works is shown by the empirical results in Anderson's (1967 Fig. 2) study of the service area of Ferintosh, Alberta. The isochrones which he derived from journey times of interviewees correspond almost exactly with the bias square except for an elongation along the N.S. highway which could be driven along faster than the E.W. road.

While Lambert only considers the bias square as a walking area it should be noted that, using loop type bus routes, equal distances would be covered by all routes starting along the axes, turning until they reached the periphery and then turning towards the other axis and thus back to the school (see Fig. 4). As can be seen, a series of routes could easily be devised to cover the area as closely as was desired though it would be at the expense of considerable duplication along the N.S. or E.W. axes.

Lambert realised that few existing administrative units were diamond-shaped so he studied the possible patterns for serving a square

FIGURE 4

BIAS SQUARE FOR EQUAL
ROUTE LENGTHS



area. He had basic conditions that the maximum walking distance should be one mile, that speed should be 15 m.p.h. and delivery time 8.50 a.m. He found 37 patterns of which six are shown in Fig. 5. He defined accessibility as:-

$$\frac{\text{Area accessible to students with one mile walk}}{\text{total area of district}}$$

Pattern 1 i.e. no bus gave a coefficient of accessibility of 0.0312 i.e.

$$\frac{2 \text{ sq. miles}}{64 \text{ sq. miles}}$$

Pattern 2 is a straight bus route two miles long. This serves an area of 6 sq.miles i.e. with a coefficient of accessibility of 0.0938 and a journey time of 8 minutes.

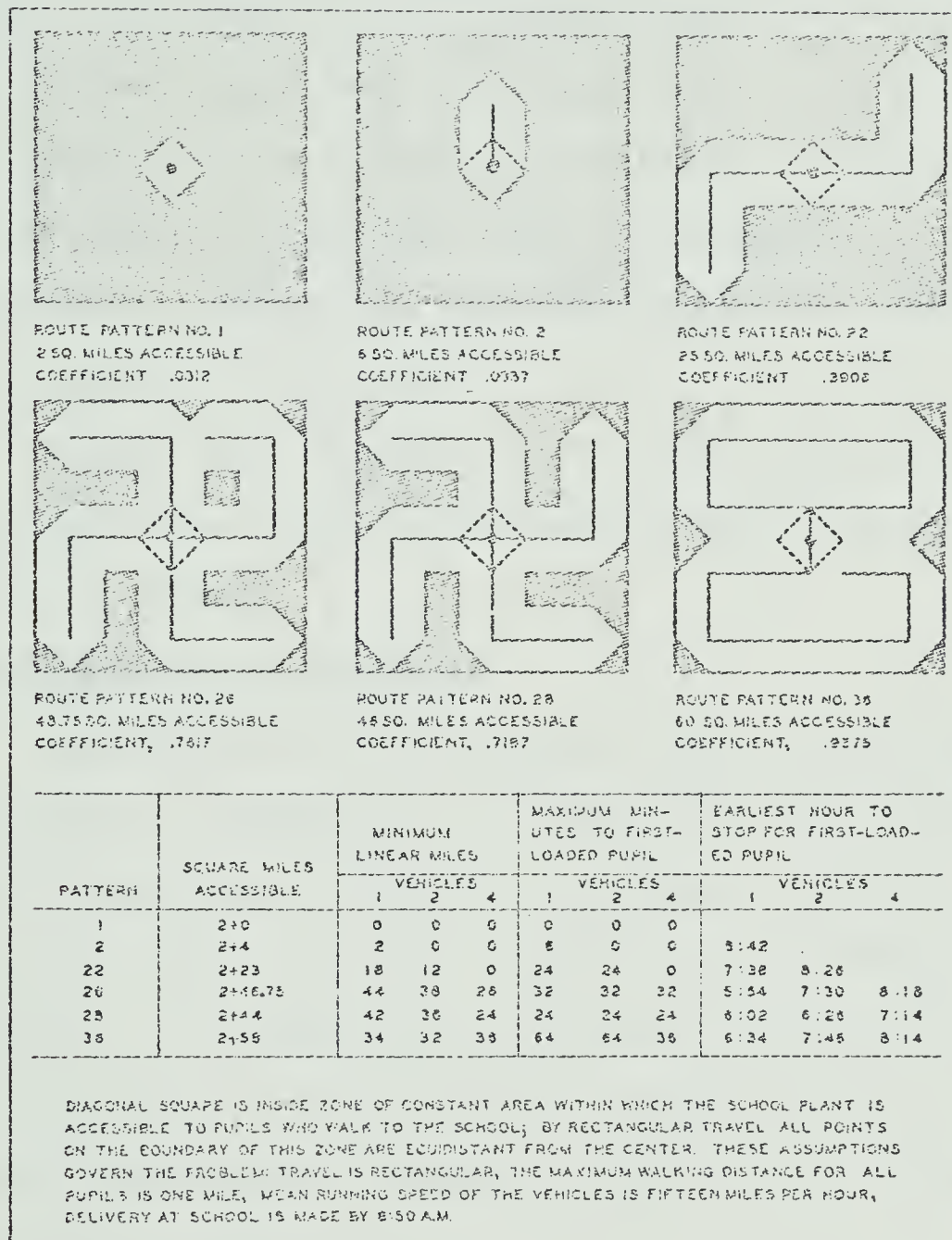
Pattern 22, 26, 28 and 36 are as shown.

Lambert does not consider the empty mileage to be travelled to reach the start of routes but it is notable that it declines from 24 in the case of Pattern 28 to only 2 in Pattern 36. Case No. 36 seems to be a limiting one for accessibility in proportion to mileage travelled and time taken. With 34 miles to cover 60 sq. miles a distance of 1.76 sq. miles are covered per mile travelled to give an accessibility of 0.9357 (60 sq. miles/64 sq. miles). The six seem to have been chosen to show a progression of efficient types.

Higher accessibilities of 0.9414 and 1.0000 (total cover) can be attained only at the expense of 0.913 sq. miles per mile and 1.28 sq. miles per mile respectively.

To see how type 36 would work in practice let it be assumed that there is an even population spread with one family per 0.5 sq.

FIGURE 5

POSSIBLE ROUTE
PATTERNS

Source:- Lambert 1938, p. 31

miles each with two children at school. For this four 58 seater buses would be required with a maximum journey time of 36 minutes. As this service would be arranged on four loops it could be arranged so that the first child picked up in the morning could be the first set down in the afternoon giving equal travel time to all. This would mean a total enrolment of 232 children plus the number residing within one mile walk from the school, which could be considerable if the school was located in a town so that the school would have a viable attendance for grades I - IX at least.

However, that is about twice the school population density in the thesis area as will be seen below so that viability would in that case be unlikely.

School Transportation in Alberta

The growth in cost and mileage of school transportation is as shown in Fig. 6. According to a telephone conversation with Mr. Matthews of the Department of Education, provisional figures for 1967 - 68 show that the cost was about \$14 million for a total mileage of about 39 million. It is notable that the mileage is rising slightly faster than the cost due to the use of larger and fewer buses. The trend towards a stabilisation in numbers of buses is shown in Table II (no later figures are available)

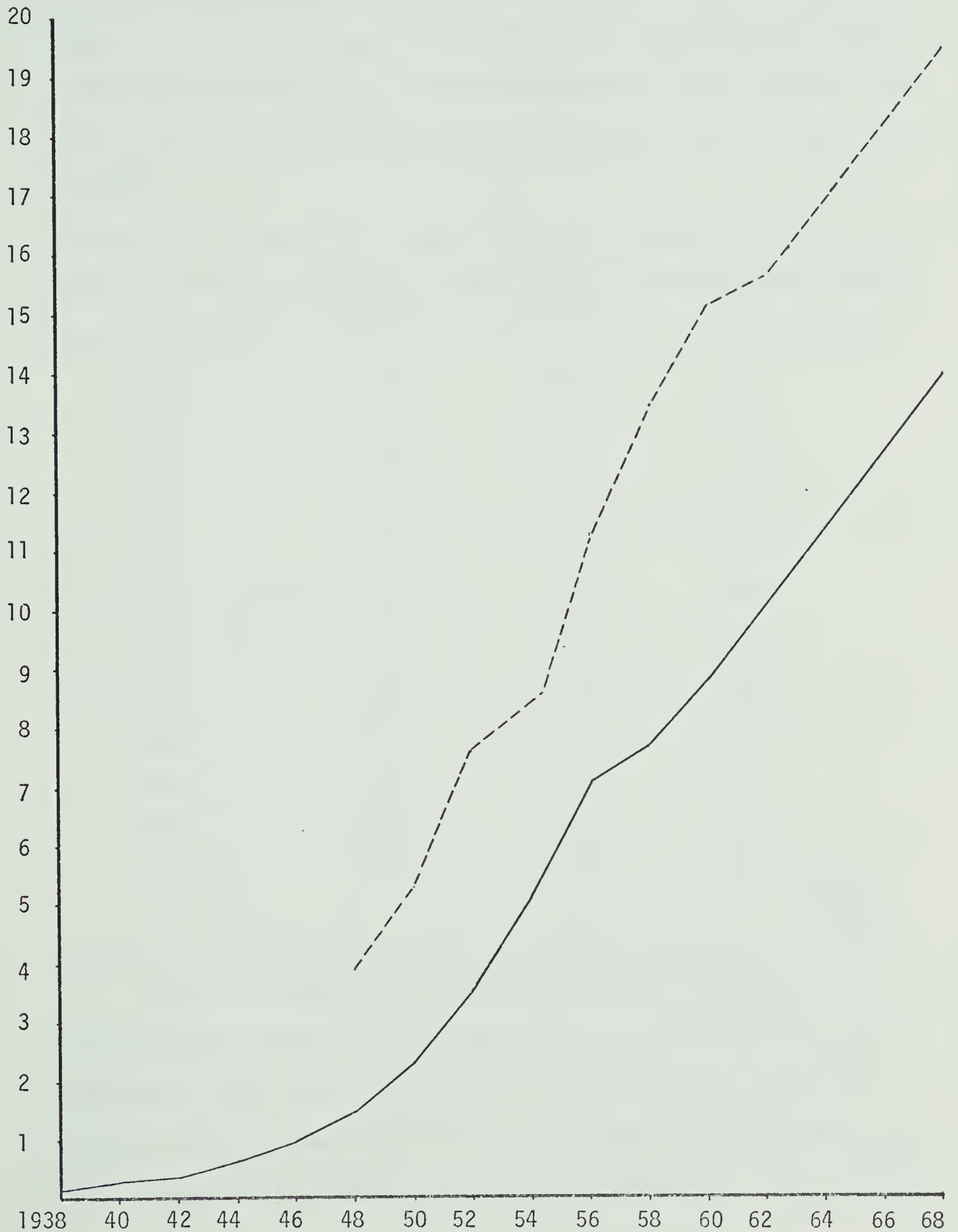
Larger buses are not inherently much cheaper per pupil but they reduce the number of drivers required and, as wages are the largest single item in the total cost, this is of major importance.

While there had been some consolidation of schools in Alberta from 1910 the chief impetus came with the establishment of school div-

FIGURE 6

GROWTH IN COST AND
MILEAGE OF SCHOOL
TRANSPORTATION IN
ALBERTA

X 10,000 miles per day -----
X \$ million per year _____



Source:- Skuba and Prov. Dept. of
Education

isions in 1935 i.e. large areas with defined boundaries and a centralised administration rather than the simple coalescence of two or more schools. With the shortage of teachers and the attendant rise in salaries after World War II the need to increase the number of pupils per teacher became acute and hence transportation had to be more fully organised.

TABLE II - NUMBERS OF SCHOOL BUSES IN ALBERTA 1947 - 61

	CONTRACT	PUBLIC	TOTAL
1947	559	138	697
1948	631	169	800
1949	698	274	972
1950	860	296	1156
1951	903	341	1244
1952	1077	410	1487
1953	1145	474	1619
1954	1142	607	1749
1955	1350	671	2021
1956	1436	718	2154
1957	1459	824	2283
1958	1492	887	2379
1959	1491	955	2446
1960	1508	1009	2517
1961			2522

Source:
Skuba

The establishment of a Foundation Program in 1961 meant that financing of education and its ancilliary services became much more of a provincial matter than in the past when almost all the money had to be raised locally. The idea of the program was to try to equalise conditions throughout the province by collecting revenue at a uniform mill

rate based on equalised assessment of land values. The money thus accumulated was to be paid out according to uniform formulae, though with the proviso that any additional revenue felt necessary by local administrative units could be raised by supplementary requisitions.

The formula used to determine the allocations for school transportation was as follows. Each school board or division was divided into districts each containing a school. The 'district distance' was defined as the distance measured along a North South line plus the distance on an east west line from the school to the most distant point in the district, minus 1.5 miles. The allocation was:-

$$\text{district distance} \times \text{number of pupils} \times \$11$$

This involved considerable calculation and could vary greatly from term to term as pupils were directed to different schools. Hence, for 1962 a new formula was adopted.

The number of acres in a complete school jurisdiction was divided by the number of statutorily transported pupils (those living more than 1 1/2 miles from school) and foundation fund money was allocated according to the scale in Table III.

It will be noticed that the increments increase from \$1 per forty acres at the beginning of the scale to seven dollars per 40 acres at the end. This implies that costs should increase at a higher rate than the fall in population density yet Lambert showed that there was no such relationship. However, as noted above the method had the advantage of ease of calculation. Skuba attempted to show the relationship between cost and foundation allocation. He found a correlation coefficient of -0.509 which means that the device

is highly inaccurate because it is an inverse relationship.

TABLE III - PROVINCIAL ALLOCATION TO SCHOOL BOARDS
FOR PUPIL TRANSPORTATION

ACRES PER PUPIL	AMOUNT PER PUPIL (\$)	ACRES PER PUPIL	AMOUNT PER PUPIL (\$)
1 - 40	95	721 - 760	131
40 - 80	96	761 - 800	134
81 - 120	98	801 - 840	137
121 - 160	99	841 - 880	140
161 - 200	101	881 - 920	143
201 - 240	103	921 - 960	147
241 - 280	105	961 - 1000	150
281 - 320	106	1001 - 1040	154
321 - 360	108	1041 - 1080	158
361 - 400	110	1081 - 1120	162
401 - 440	112	1121 - 1160	167
441 - 480	114	1161 - 1200	171
481 - 520	116	1201 - 1240	176
521 - 560	119	1241 - 1280	181
561 - 600	121	1281 - 1320	187
601 - 640	123	1321 - 1360	193
641 - 680	126	1361 - 1400	199
681 - 720	128	1401 - 1440	206

Source: Skuba 1965

The foundation program makes no attempt to legislate standards to service and thus the fact that a board spends more or less than the foundation allocation does not indicate anything about the quality of the service.

School Location in the County of Camrose

Before discussing the pattern of routes and operation of buses in the county, it is necessary to consider the location of schools and their types.

School location is as shown on Fig. 7. They may be subdivided as follows:-

TABLE IV - SCHOOL TYPES IN COUNTY OF CAMROSE

Schools offering grades I - XII	Bashaw	333	pupils
	Bawlf	384	"
	Edberg	181	"
	Hay Lakes	277	"
	New Norway	323	"
	Round Hill	179	"
Schools offering grades I - XI	Meeting Creek	132	"
	Rosalind	266	"
Schools offering grades I - IX	Sefton (Camrose)	298	"
	Kingman	129	"
Schools offering grades I -VIII	Armena	76	"
Schools offering grades I - VI	Ferintosh	57	"
		<u>2635</u>	

Source: Province of Alberta, Dept. of Education 1968.

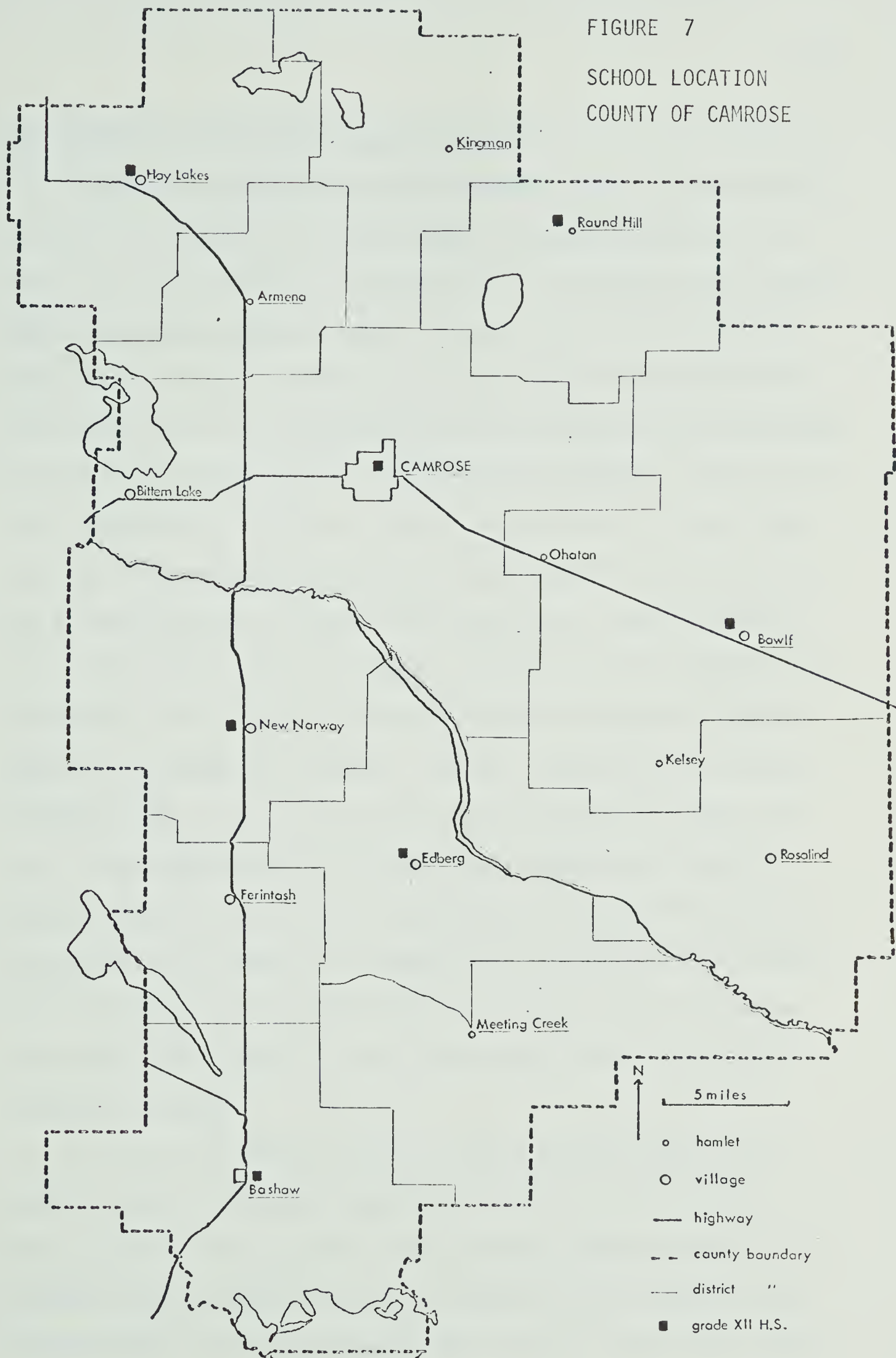
In addition there is a school on Camrose Hutterite Colony which accepts only children of the colony and ends at grade VII.

An important school to the children transported by the County is Camrose Composite High School, owned and operated by the city but used by the County for pupils in grades X, XI and XII who live in the Sefton catchment area and for some outside areas - 96 from the Sefton area and 51 from elsewhere.

The reasons for school location are almost impossible to ascertain, largely because schools were sited in the same places so long

FIGURE 7

SCHOOL LOCATION
COUNTY OF CAMROSE



ago. However, a few reasons may be suggested.

Most of the schools come under Downer's type II (Downey 1965) i.e. 40 - 99 in grades X, XI, XII except for Meeting Creek which is type I i.e. 0 - 39 pupils. They are thus in the smallest size classes apart from Camrose Composite High. He notes that most of the small high schools had their origins in the early days of school consolidation when little or no transportation was provided and when education was aimed almost exclusively at a matriculation program. With the financial structure of the time it was in the interests of local school districts to have small high schools. The legacy of these times was hard to erase because of inertia and local pride. Once a community has a high school, although, as Downey suggests, it is a 'high school' in name only, local vested interests build up to sustain it even if academic justifications disappear. Several teachers may be the only salaried people in an area so local merchants appreciate their custom. The headmaster may be a 'career small-school-administrator' (Downey 1965 p. 50) who enjoys the prestige of being the best educated person and a leader of the community. Local wives who have gone back to teaching after marriage and who are tied to their husbands' farms and are thus unable to move if the school closes, constitute a barrier to change.

It could be expected that the school children might constitute a market which would make local merchants want a school sited near them. This is not in fact the case because so many of the children travel by school bus and are unable to go to any shops outside the school. Even at Bashaw, where there is a large local school

population who can shop after school the local traders may find them a mixed blessing. Both cafés in the town complained about vandalism by high school pupils and one banned them (Bashaw Star 1969).

People like to feel that their 'town' is important and conversely that the closing of their high school means that their town is slipping into oblivion. Also it must be faced that many parents who may in general be well disposed to education feel that, once their children move to a larger settlement for schooling, they are lost to the land.

A reason for opposition to centralised schooling which emerged in interviews was that these schools concentrate youth organisations, and parents have to transport children to and from them, quite frequently causing considerable interruption to their leisure time. Some interviewees even felt that this was the major reason for opposition.

Thus the location of high schools in Bashaw, Bawlf, Edberg, Hay Lakes and New Norway may be explained by the fact that they are in villages or a town and thus have representatives on the County Council who can insist on schools being located there.

Rosalind was reduced to a grade I - XI school quite logically in view of the proximity to Bawlf which is located more centrally relative to the eastern edge of the county. A 1967 report on high schools in the county (Province of Alberta 1967) recommended that Rosalind high school be closed. The same report also recommended the merging of Meeting Creek High School with Edberg, which has already happened in the case of grade XII.

Ferintosh has lost its high school to New Norway which is only just over seven miles away. It is now reduced to grades I - VI.

Round Hill is unique in being the only hamlet in the area with a I - XII school, but it must be borne in mind that the status of a settlement is partly fortuitous. It is in a late settled area and villages were ceasing to be incorporated.

Inertia is the most likely explanation for the continuation of a school at Armena.

Sifton is an anomalous school. It is a county school but is situated within the boundaries of another administrative unit i.e. the City of Camrose. It is operated solely for students who live outside the city and has the distinction that all its pupils are transported except for those who live outside its official district. Sifton only accepts pupils to grade XI beyond which they transfer to Camrose Composite High School operated by the city - in 1967 - 68 this involved 96 students. Camrose is a logical place to site a school. It is central relative to good roads and has the amenities of a fairly large centre which makes it attractive to teachers. This in turn raises the standard of instruction but it is difficult to see why the County should maintain a school there. If the children can attend the Composite High school for their final grades it would seem that they could be integrated with the rest of the city schools. The county pays the very low fee of \$10 per year per pupil for those at the City high school in spite of the fact that they make up over 1/4 of the enrolment - 147 out of 614 pupils. It is highly unlikely that they would get such a cheap rate for all children as probably the

city can offer such low rates only because its teachers are under utilised, as they offer a wide ranging curriculum.

Another element of school location is that it seems to be roughly equidistant but this is a function of settlement size and the inertia noted above rather than school policy per se.

However, Edberg school seems rather close to New Norway and Meeting Creek appears to be the more logical site for the grade I - XII high school. In this case several factors may have operated. Firstly Meeting Creek seems to be declining more rapidly than Edberg. Secondly it is not a village and hence is not susceptible to supplementary requisition. Thirdly it might be argued that, because of its proximity to the county boundary it would be less centrally located relative to its area though this could also be said of Round Hill, Hay Lakes and Bashaw. Probably the existence of the physical plant from Home Economics and Shop, which were installed while Ferintosh was still a high school, and could not easily be moved, was the main factor.

The School Bus Routes

The 57 school bus routes in the county are as shown on Fig. 8. With a total of 1842.5 miles of route compared with 2062.5 miles of provincial and district roads in the county it can be seen that the area is almost totally blanketed. The almost 90% cover which this implies is not in fact completely true as some of the routes involve duplication, either in the form of two or more bus routes covering the same piece of road or one bus making a return trip on one section.

The range of lengths of individual bus runs per day is as shown in Table V, subdivided by schools.

Considering the different sizes of school and the fluctuating numbers of children these mileages are quite similar though the reasons for this will be shown later.

The total daily mileage on regular routes is thus 3685 but in addition there are special trips to carry children older than grade VI from Ferintosh to New Norway, those older than grade VIII from Armena to Hay Lakes and those older than grade IX from Kingman to Round Hill and Rosalind to Bawlf. The children who have transferred from Sifton to Camrose Composite High school are not carried in separate buses, the Sifton buses merely make an extra stop. The same procedure is followed for the few children attending separate school (often for retarded children).

Those children older than grade XI in the Meeting Creek area are paid \$2 per day to arrange their own transportation.

School buses are also used to transport pupils to Home Economics and Workshops for which there are facilities at Edberg and Camrose Composite High only. Edberg serves pupils at Meeting Creek, Bashaw and New Norway while Camrose, which has four laboratories serves all the other schools.

Altogether there are 2653 pupils in the county school system, 64 children living in the county area but attending the Separate Schools and 147 at Camrose Composite High. Of the latter, 96 are from within the Sifton school area and 51 from the rest of the county.

Of a total of 2864 school children residing in the county and

attending schools within the county or city, 2275 are carried by school bus i.e. 79.4%. This percentage may be low because some of the children listed as attending Camrose Composite High may be those actually at other schools but only going to Camrose for Home Economics or Shop.

Because the available figures list the numbers of children transported to the schools within whose area they reside, rather than the totals transported to each school, it is impossible to work out the percentage transported to each school. For example, only 57 pupils attend Ferintosh school but 71 are taken there by bus - those older than grade VI continuing by special bus to New Norway.

Of the 57 buses 52 are 48 seaters and 5 are 42 seaters. The latter are being phased out as the county is standardising its fleet. All the buses have petrol engines because, with an annual average mileage of about 14,000 and mostly light stop-and-start running, a diesel would not be much cheaper to run and any savings there would be more than offset by higher initial costs. Diesels would also have the disadvantages of extra noise and vibration - an important feature with relatively light bodywork. The trade-in cost of a new bus is about \$6100 and the Province pays a depreciation allowance of \$850 per year for eight years so that the county actually makes a 'profit' of about \$700 per bus. The total cost of the bus service in 1967 - 68 was \$231,727 of which \$178,814 i.e. 77% was drivers' salaries.

Table VI shows that, as a means of transferring people with the minimum number of vehicles, the bus service is efficient. The very high percentage in Sifton shows that a large number of pupils

TABLE V - DAILY MILEAGES OF INDIVIDUAL BUS ROUTES

	AVERAGE PER SCHOOL										AVERAGE TOTAL
Armena	58	50									54
Bashaw	64	54	76	72	69						67
Bawlf	64	72	78	60	56	71	84	90			72
Edberg	52	46	65	46							52
Ferintosh	66	60									63
Hay Lakes	56	66	54	59	56						58
Kingman	58	58	55								57
Meeting Creek	68	58	54	64							61
New Norway	76	53	52	62	60						61
Rosalind	60	58	84	69	58						66
Round Hill	47	64	60	58							57
Sifton and Camrose	100	72	60	70	86	80	72	80	65	80	76.5
64.6											

bus runs per day = 2x route miles

Source: Camrose County School Division

can have a high load factor but for the rest there is little to indicate any direct relationship between load factor and numbers of children carried. Possibly, if several sizes of buses were used the load factors could be increased but this would be at the expense of added maintenance difficulties which would offset most of the savings.

TABLE VI - LOAD FACTORS FOR SCHOOL BUSES IN THE THESIS AREA

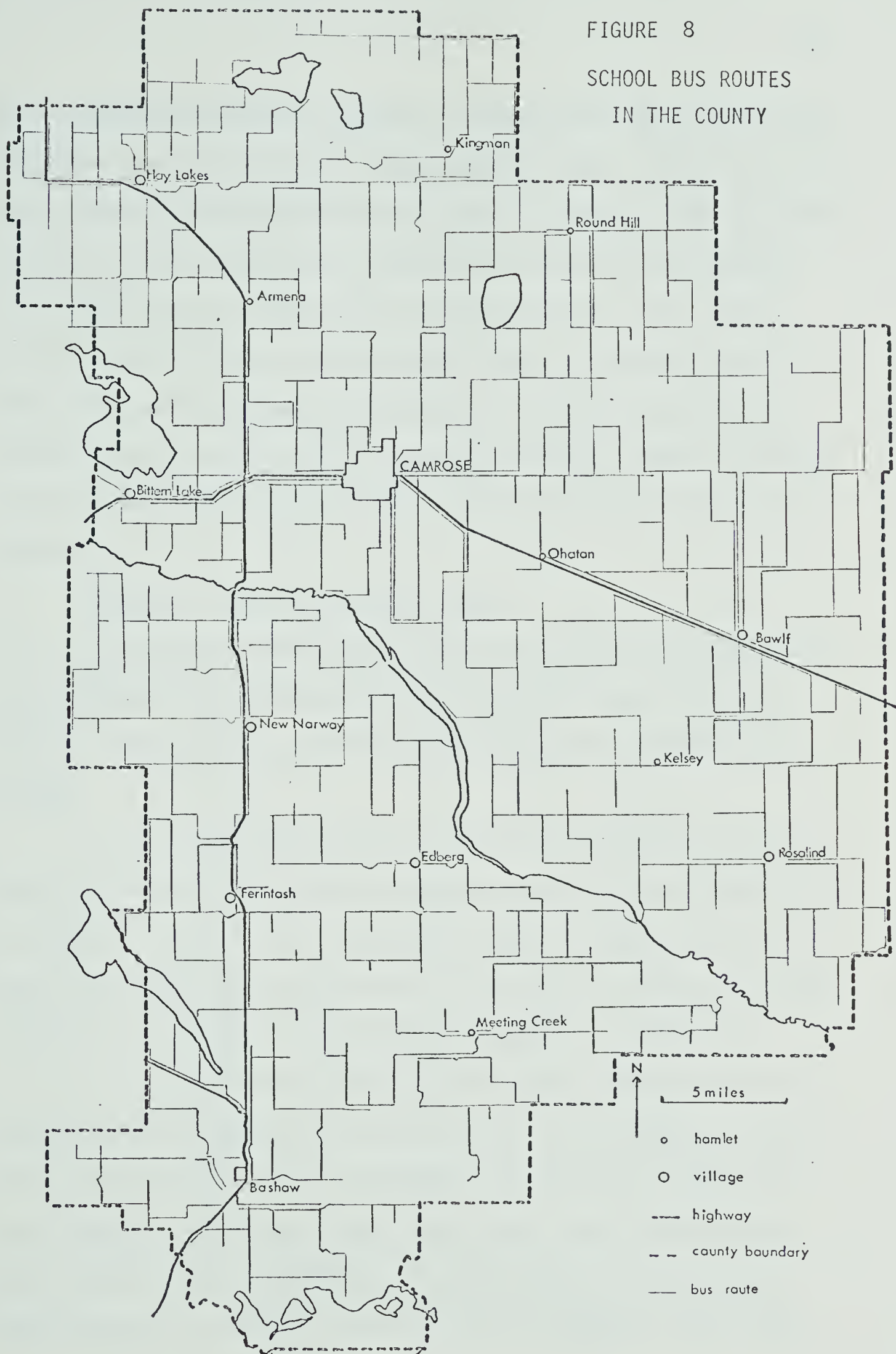
	NO. OF CHILDREN	LOAD FACTOR
Armena	79	87.0%
Bashaw	178	74.1%
Bawlf	316	82.3%
Edberg	138	76.7%
Ferintosh	71	73.9%
Hay Lakes	209	87.0%
Kingman	136	91.8%
Meeting Creek	130	69.8%
New Norway	208	88.9%
Rosalind	210	87.5%
Round Hill	132	68.8%
Sifton and Camrose	468	97.5%
	<u>2275</u>	Total load factor 84.07%

Source: Camrose County School
Division

Much of the existing efficiency is probably due to flexibility in district delimitation. Fig. 8 is drawn simply by marking the limits of school bus routes for each school. This is partially the method which the county uses and they vary slightly from year to year. However, one interviewee complained that her son could not get a school bus to a Camrose school because he was classed as being

FIGURE 8

SCHOOL BUS ROUTES
IN THE COUNTY



in the Hay Lakes district. This was in spite of the fact that the bus to Camrose came to within half a mile of their home. This was the only case encountered where the child was driven to school. When questioned the county council replied that they had to draw the line somewhere.

The routes are all based at least partly on a loop system. This means that the bus does not proceed empty to the point most distant on its route and come back picking up children along the way. Instead, as noted above in the discussion of Lambert's work, children are picked up along a non-repetitious route starting and finishing at the school.

There are several reasons for this:-

1. The bus is only empty for a short period at the beginning of the morning route and the end of the afternoon route thus every mile is a 'working' mile and the driver is only paid for when he is working.

2. It is desirable that the buses start and finish at the school because the county owns and maintains the buses at garages at the schools. This in turn is desirable because privately owned buses tend to cost about 5c per mile more to run because of higher overheads, according to an official of the Alberta Department of Education.

3. By running the buses along the loop in the same direction both morning and afternoon the first child on in the morning is first off in the afternoon. This is desirable for social and academic reasons, though it seems odd at first sight that a child living three miles from the school should have to travel over 30 miles per day. Offsetting this is the fact that no parent can complain about unfair-

ness. The county encourages drivers to reverse the direction at set intervals so that the early starts are alternated among children.

This also removes the anomaly that a child may, when the circuit is in one direction, have to get on a bus nearly an hour before its neighbour who gets on another bus possibly going to another school.

Each bus driver is supposed to fill out a form at the beginning of the year noting the exact time that each child is picked up and the distance the child has to travel on the bus. In practice this demand is not enforced and few completed forms are available. One of these is illustrated below:-

TABLE VII - SAMPLE TIMETABLE FOR A SCHOOL BUS ROUTE

SIFTON SCHOOL, CAMROSE COMPOSITE HIGH, SEPARATE SCHOOLS ETC.			
STOP NO.	TIME	NO. OF CHILDREN	MILES TO TRAVEL
1	7.36	2	25 x 2
2	7.40	1	26.5 x 2
3	7.42	3	26 x 1 23.5 x 2
4	7.45	4	24.5 x 2 22.5 x 2
5	7.50	3	20.5 x 1 19.5 x 2
6	7.51	3	17.5 x 1 15.5 x 2
7	7.58	2	15 x 2
8	8.01	1	16 x 1
9	8.02	3	13 x 3
10	8.04	1	15 x 1
11	8.08	4	13.5 x 2 11.5 x 2
12	8.09	1	11 x 1
13	8.11	2	10 x 2
14	8.13	2	9 x 2
15	8.15	1	8 x 1
16	8.20	2	8 x 2
17	8.24	2	4.5 x 2
18	8.25	5	6.5 x 2 4 x 3
19	8.30	2	3.5 x 2

Length of route - 36 miles

Source: Camrose County School
Division

A SAMPLE BUS ROUTE



Source: Camrose County School Division

Doubt may also be cast on some of the times as one bus to the school in Bashaw has to first pickup at 7.05 and this seems highly unlikely considering the length of the run.

However, assuming all times are correct it is possible to see the bus service as making all points in the county almost equidistant in time from the nearest school, at least equidistant considering the total daily travelling time. Thus, especially with the changes in direction of travel it is impossible to plot isochrones, defeating a common geographical procedure, though MacGregor (1953) pointed out that this was often difficult when dealing with public transport.

In almost all cases 'gate service' is given, that is, the children are picked up where their private farm road meets a district or provincial road. It is not known to what extent this is carried out because few bus drivers list the distance that each child has to walk. If complete gate service is offered it is unlikely that many children have to walk more than a quarter of a mile though half a mile is just possible. The driver has a considerable monetary incentive to run a true gate service as he gets paid half a mile ($6\frac{1}{2}$ or 7 cents) for each turn at the end of a spur, each pupil stop and also his two way distance.

The Questionnaire

The questionnaire aimed at discovering attitudes towards the bus service rather than basic facts which were derived from county data.

Of the forty-two interviewed twenty-nine had school children and twenty-six were satisfied with the school bus service and three

were not. One was dissatisfied because it cost a lot in taxes, another was the example quoted above whose child was supposed to go to Hay Lakes and she thought that Camrose was a better school. Another was just dissatisfied but would not specify why.

Of the fifty-three responding to mail questionnaires, twenty-eight had school children. One was dissatisfied because the child came home too late and another found it inconvenient domestically.

The hypothesis behind this question 'Are you satisfied with the school bus service?' was that dissatisfaction might increase with distance of travel. With so few negative answers the hypothesis must be taken as wrong.

As there was little difference between mail and interview response on the above, the two types were taken together on succeeding questions.

The question 'Does it (the time spent) matter more or less as the children get older?' brought forty-nine responses. Of these ten thought that it mattered more and the reason given in interviews was that older children were more helpful round the farm. In several interviews it was learned that older children stayed away from school during harvest, though some used cars to cut travel time.

Eighteen felt that it mattered less as children got older. In interviews the reason given was that it was hard on young children to have to sit still and quiet so long. As Lambert has suggested that three quarters of an hour was the maximum time to be spent by young children, the parents may have a point. However, a Provincial Department of Education official suggested that one hour each way was prob-

ably reasonable if the children had something to do, like reading (though he agreed that the interior lights of buses were rarely switched on because of reflections on the windshield).

Twenty-one felt that it made no difference.

The last question in the section 'If it would shorten the journey time would you consider transporting children to 1. School, 2. Central pick-up, 3. Main road' seems to be the most contentious in the whole questionnaire.

Three said they would transport children to school and one of these actually did but the other two said only to the local school.

Four said they would take children to a central pick-up.

Three said they would take children to a main road.

The other thirty-nine were vehemently against the idea, those interviewed refused even to consider it and most of those replying to mail questionnaires wrote a large 'NO'.

Thus, it can be seen that people are generally highly satisfied with the service and they are not prepared to back up any complaints with personal action. It is likely that this attitude stems from the exceptionally liberal attitude of the county authorities. The provincial regulations state that no child has a right to transport if it lives within 1 1/2 miles of the school. Even this is not enforced by the county though in practice the loop service causes some self-limitation as few parents wish to see a child travel so far for the sake of one mile. However, the official responsible for school buses could think of no case of a child with a right to transportation being taken to school by its parents. The use of gate service precludes the

use of Lambert's system of working out routes because the one mile limit cannot be used. Rural children do not cycle or walk to school.

Gate service is undoubtedly a safety feature in bad weather or darkness, but it has been noted that parents will continually ask for better conditions. For example, Edmonton has for some time provided cheap transport on public buses for children living more than 1 1/2 miles from city schools. Edmontonians moving to Calgary made similar demands there and had the limit reduced from 2 1/2 miles to 1 1/2 miles so that the two Albertan cities have the shortest walking range in Canada.

The extent to which a bus driver can profit from the system was noted before.

The reason for such apparent extravagance may be the financing system of the School Foundation Program. The funds for this program are derived from a system of equalised assessment whereby differences in ability of different areas to pay are supposed to be allowed for. In practice, as a judgement of the Alberta Supreme Court in November 1968 showed, rural areas contribute less than their share while urban areas contribute more. In 1966 the county received \$1,360,691 from the school foundation program but contributions to the province were only \$528,966 (County of Camrose 1967, p. 3 and p. 22).

The basis for the transportation grant was noted before. In 1961 the grant received was \$251,255 but expenditure was \$208,558 (Skuba 1965, p. 90). By 1966 the figures were \$254,502 and \$214,406 (County of Camrose 1967, p. 22 and p. 30) respectively so that the disparity still remains. The 1967 - 68 expenditure was \$239,250 so

that the school board has no reason to economise - especially as the average driver's wage is \$3,137 per year which is an important local source of income (this is about \$7 per hour which is a higher rate than the teachers are paid).

Skuba carried out a regression analysis of possible predictors of expense for the province as a whole but even when four of these were used in combination (which would have produced administrative difficulties if applied in practice) the county would still have a surplus. This all tends to back up Lambert's contention (1938) that '... the general ratio, density of population, does not have a close or reliable relationship to necessary quantities or expenses of pupil transportation' (Lambert, p. 85). Also Skuba was really measuring the precision of school administrations in setting up school bus services whose expenses would match predictable income. No standards are even stipulated.

Downey's investigation (1965) into the small high school in Alberta indicated that these schools, with less than 300 pupils in grades 10, 11 and 12, were inefficient and did not give adequate educational opportunities to those attending them. By this standard only Camrose Composite High can be said to be efficient. Dormitories have been tried in the past but have rarely been successful.

He suggested that the best solution, where small high schools could not be closed down completely, would be to establish a 'large high school complex' or 'multi campus high school' with a central large high school with good facilities and the others acting as satellites.

With almost equal radial spacing the schools in the county seem ideally situated for this, and the use of special buses for home

economics and shop indicates that transportation would not be very difficult. It might be suggested that the increased travel would involve waste of time but if the pupils are already wasting time by trying to study at schools with inadequate staff and facilities this argument loses much weight. Also time is wasted at present with the loop system of bus routes. If parents transported high school children to central pick-up points, e.g. the existing schools, to get on buses to Camrose, it is unlikely that travel time would be even as long as at present.

In view of the opposition to such action (which is at variance with the school inspectorate report (Province of Alberta) that the low dropout rate was due to high parental interest in education) a check was made on the actual cost of the transportation of the survey sample compared with the potential cost of transportation by their parents.

A total of 122 children were involved with a pupil mileage of 3909 pupil miles per day. The total daily pupil mileage for the county was 73,483 i.e. the sample was 5.31%/ As the total cost of transport per day for the county was \$1067 the cost for the sample was \$56.65.

The same sample of children would have had to travel 616 miles per day by car using the most direct routes to school but the parents must be allowed a return trip home in the morning and a trip to the school to pick them up in the afternoon i.e. a total daily mileage of 1232.

The Alberta Motor Association estimates that the average running cost of a new U.S. car, on a basis of 10,000 miles in its first year, is 14.1 cents per mile (Telephone conversation, Alberta Motor

Association, Edmonton) i.e. for the sample a daily cost of \$172.48. However, the component due to mileage is only about 8 cents per mile i.e. \$98.56. If the rate allowable for expenses by the University of Alberta i.e. 5 cents per mile is used (which with older vehicles running on purple gas might be close to the truth) the cost would be only \$60.60.

However, even if the 8 cents per mile rate was applied to the high school population of about 16.5% of the student body the extra cost would be in the order of \$120 per day plus the cost of the bus to Camrose. If this was only necessary two days per week i.e. 80 days per year the total extra cost for parental transport would be about \$9600 per annum. In view of the present surplus this seems a small price to pay.

Evaluation

The school bus service was pronounced 'superb' by the high school inspectorate but this must be looked at in the perspective of the educational system as a whole. While the system is very efficient in terms of moving a large number of pupils to school in a uniform and not unreasonable time to school, and at a very high load factor by commercial standards, this is not a good thing unless it genuinely raises the educational standards. It is the opinion of the author that it does not raise the standard and may in fact depress it because by its efficiency it encourages the persistence of an antiquated educational structure. In 1966 45% of the teachers in county schools had only one year of training and only 4% (five teachers) have five years training i.e. an honours degree plus education training. 54% were on maximum salary. Only 24%

had degrees (County of Camrose 1967, p. 48). It is impossible to say how much of this is due to the county not wishing to pay for well qualified teachers and how much to the unattractiveness of village or hamlet life to people of non-local origin but the latter must be of some importance. This could be reduced or eliminated by centralisation in Camrose.

It seems amazing that, over 30 years after the publication of the only book treating the subject comprehensively with statistical backing, the ideas expressed therein should be ignored. Lambert showed that geographical prediction could not really work yet the province persists in its use presumably for convenience and because it still leaves considerable control of actual policy in local hands. It was suggested by a provincial official that six inspectors working for ten months could travel over every school bus route in the province and gather facts for developing a standard of quality for school bus services on a basis of which school boards could be paid according to actual requirements. Whether or not this would result in a saving on a provincial scale is hard to say but it would eliminate inequalities.

The benefits of the bus service in the past, even in its side effect of raising road standards by providing a constant inspection system by drivers reports, should not blind one to the fact that its efficiency as a medium of communication may be retarding the development of that which it is communicating.

CHAPTER III

THE RURAL MAIL SERVICE

General Background

The Post Office is one of the largest federal agencies in Canada and probably the most widespread geographically. In 1968, 4.9 million items went through the post to 4,568,329 households and businesses, through 10838 post offices. 48,376 people were employed and the whole enterprise cost \$404,200,000 including a deficit of \$67,200,000 (Canada Post Office 1968a.)

In spite of the great extent of postal services not only in Canada but throughout the world they have been ignored almost completely in geographical studies. Vallega (1966) made a brief study of postal and telegraphical communications but this related completely to international services in an attempt to establish a relationship between numbers of letters and telephone calls and quaternary or service industry.

Even among economists little attention has been paid to postal services as Baratz noted (1965, p. 1), with reference to the U.S. Post Office that '...never to date has anyone, either in government or out, published a systematic exposition of the policies of the Post Office Department, much less an analysis of the historical, political and economic reasons therefor or the economic (i.e. allocative and distributive) effects thereof'. He also observed that only six doctoral dissertations had looked at the Post Office.

In Canada some early historical studies have been made, but only one small pamphlet published by the Post Office (Canada Post Office

1968b), attempts to discuss development to the present day and this cannot be considered a serious study. Elsewhere, and especially in Britain, the history of the Post Office has been extensively documented but there the circumstances are too different for comparisons to be valid.

The reasons behind this lack of study must remain speculative but it is possible that the sheer ubiquity of the service has discouraged study, or that the monopolistic nature of the service has seemed to pose difficulties, or possibly the fact that the service seems to run under its own momentum has quashed hopes of understanding the way it is run. Another discouragement may have come from the lack of information about volumes of flow of mail. No counts are kept of numbers of incoming or outgoing items of mail at post offices and the estimates above of total volumes are based on incoming weights at central district offices, the weight being converted into items by a periodic sampling process (and a postal official interviewed felt that 'a few million either way did not make much difference').

The Rural Mail Delivery

The primary object of this chapter to to discuss the rural mail delivery system in the County of Camrose but this must be considered along with the rest of the mail service in the immediate thesis area and beyond if judgements of its effectiveness are to be valid.

All of the regulations discussed below appear in the booklet Rural Mail Delivery 1968c issued by the Post Office. There are two basic types of rural mail service:- rural mail delivery and delivery at Post Offices. The former is defined as '...a system for collection and delivery of mail; and for the transaction of other postal business with persons residing along or near well defined roads in reasonably

well settled rural areas'.

'There is no charge for service. Mail will be delivered to your box and collected therefrom at the expense of the Post Office Department' (Section 75, p. 24).

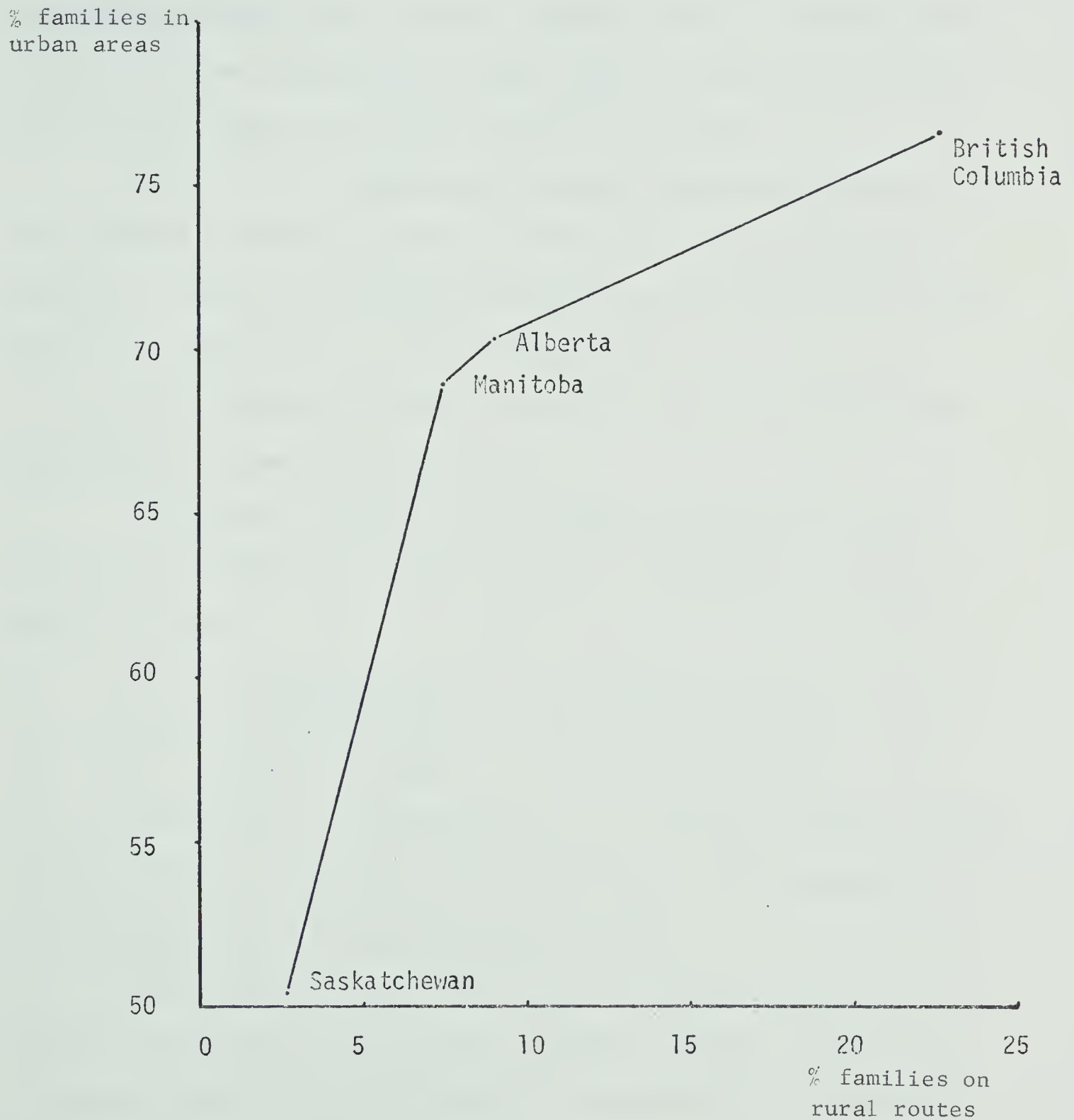
Delivery at post offices is in two forms, general delivery and lock box. In the case of the former, mail is handed out to patrons during office hours but in the latter they have keys to boxes in an annex to the post office which is open at all times. No charge is made for general delivery but a nominal charge is made for lock boxes though recently moves were made to make this service cover its cost.

Rural mail delivery is by no means comprehensive in Canada and in fact it may even be misnamed as a postal official interviewed thought that the majority of people served lived in the fringe areas of large urban units rather than in the open country. This is largely borne out by plotting percentage of provincial population with rural mail delivery against percentage of the number of families classed as urban in the 1966 census. As can be seen in Fig. 10 there is not complete agreement but the order of percentage population in each category is the same.

This disparity is largely due to the regulations laid down by the post office for establishment of routes. Two clauses are relevant 76(a) and (b).

'a. First plan a route (with the aid of a map if available) or reasonable length over well kept roads, which will make service available to the greatest possible number of residents. Preferably the route should be of a circuitous nature, avoiding, as far as possible, spurs or duplication of travel. Any resident not directly along the proposed route may obtain service by erecting a box along the route at the closest point to his home.

FIGURE 10
URBAN POPULATION/
RURAL MAIL DELIVERY,
BY PROVINCES



Source: Census 1966

b. A minimum of three householders per travelled mile will be required for a route providing daily except Sunday service. Where there are fewer than three householders per mile, a less frequent service will be provided.'

The 'reasonable length' which a postal official defined as 4 - 5 hours maximum travelling time or 60 - 70 miles would tend to preclude services to isolated areas as would 'well kept roads'. Similarly the 'minimum of three householders per mile would be expected (with just less than this overall when the turns were considered).

In practice the regulation concerning spurs and duplication is one of the most stringently enforced. While they are not altogether banned, the contractor only received payment for one way travel on each spur, which effectively is a major disincentive.

These regulations explain the complete lack of rural delivery in the Yukon and North-West Territories.

In most rural areas in Western Canada the full six day service cannot be offered but reduced service is offered on a sliding scale as follows:-

2	patrons per mile	4 deliveries per week
1 1/2	patrons per mile	3 deliveries per week
1	patron per mile	2 deliveries per week

This is often a discouragement as, with modern transport, people can travel to their local post office frequently, thus considerably reducing the attraction of two deliveries per week.

At the intra provincial level there are great disparities. The numbers of persons in each post office district (based on federal constituencies) served by rural delivery is expressed as a percentage of the total in that district as shown in Table IX.

TABLE IX % OF PATRONS SERVED BY A RURAL DELIVERY
BY P.O. DISTRICTS

DISTRICT	TOTAL	NO. ON RURAL DELIVERY	% ON DELIVERY
Athabasca	14,940	51	0.3
Battle River	14,108	2,510	17.7
Crowfoot	15,882	1,140	7.1
Edmonton West	318	125	39.3
Lethbridge	7,790	102	1.3
Medicine Hat	8,838	72	0.8
Palliser	9,272	1,143	12.3
Peace River	12,222	325	2.6
Pembina	16,823	1,904	11.3
Red Deer	13,437	2,758	20.5
Rocky Mountain	14,896	390	2.6
Vegreville	16,125	1,827	11.3
Wetaskiwin	16,833	3,752	22.2
	145,385	16,099	11.9

Source:- Household Figures 1967.

However, it should be noted that in computing these figures not only were the numbers of households served by letter carriers in Calgary, Camrose, Edmonton, Grande Prairie, Lethbridge, Medicine Hat, Red Deer and St. Albert not included, but the people also served by general delivery or rural delivery from those towns and cities were excluded. Thus, for example the Camrose general delivery and rural route patrons are not included in Battle River district totals. It is likely that these omissions result in the percentages being too low for those centres with letter carrier offices.

Because of the variations within districts and discrepancies in the data it is impossible to be precise, but it appears that rural mail delivery is most common in the densely populated black soil regions of Alberta. This relationship might be expected from the criteria used for providing routes but according to postal officials interviewed other factors were almost certainly of importance as will be seen later, the above being merely permissive.

Within the regulations an important variable may be created or may have been created in the past by clause 76(c) -

'Circulate a petition to be signed ONLY by the HEAD OF EACH HOUSEHOLD interested in obtaining service. Number each signature and show opposite each name the location of the householder i.e. Lot No. (Quarter Section) etc. The petition should be signed by at least 50% of the heads of households in the area to be served by the proposed rural route'

This requires someone prepared to take the initiative and also a degree of social cohesiveness for people to co-operate to raise the 50% required. It was suggested by postal officials at the local and regional level that this was most likely to occur in areas of relatively homogeneous ethnic origin, or, as was probably the case in the thesis area, common previous settlement in an area where rural mail delivery was already in existence.

The rest of the regulations concerning the setting up of routes also leave a great deal of the initiative in local hands. A map must be prepared showing the proposed route with the positions of each petitioner. Similar procedures are necessary for extensions of existing routes. It is not certain whether this is based on the idea

of grass roots democracy, a desire on the part of the post office to avoid the expense of employing people to design routes, a desire on the part of the post office to avoid controversy by not making many decisions or simply the belief on their part that local people with local knowledge are most likely to know what they were doing.

The mechanism of operating the routes is governed by a set of regulations concerning patrons, couriers and, to some extent, the rural postmasters.

Mails are delivered under contract by which the courier is paid by daily mileage calculated to one tenth of a mile. The courier is responsible for his own vehicle which may be of any type. The Post Office only insists that he 'make a reasonable effort to perform service' (p. 20) in the event of difficult climatic conditions. Penalties are specified in the individual contracts for failure to deliver without due cause. As well as being responsible for sorting and delivering of mail to the boxes the courier must also carry out services such as sale of stamps, money orders, registration and parcel notification.

The patron has certain specified duties such as maintaining his box at the right height and in good condition (the former being important as the courier is under no obligation to get out of his vehicle as the box is on the right hand side of the road in the direction of travel). It is also the patron's duty to keep the approaches to the box clear of snow, a considerable undertaking in those areas with heavy snowfall and large ploughs which may throw up snow ridges. Road conditions in general are a municipal responsibility, as the Post Office recognises, but they make it the patron's, rather than the courier's duty to see that the roads are in fact maintained. 'It is not the duty of the mail cour-

iers to break roads after storms'. (Section 95, p. 29)

Another duty is for the patron to set his box at right angles to the road, if it is a swinging type, or with the small metal flag raised, only if there is mail to be picked up, thus saving the courier unnecessary stops. The courier in turn must set the box in the same way if he has left mail so that the patron can see immediately if that is the case. Postal officials say that this is particularly important in the winter.

Rural mail delivery may have certain disadvantages to the individual patron. 'Post offices on or adjacent to new rural routes or extensions will be closed when rural mail delivery is made available to the patrons'. (Section 79, p. 26) 'Boxholders may not obtain delivery of mail at the post office unless the frequency of their rural mail delivery is LESS than daily except Sunday, in which case mail will only be handed out on other than mail delivery days...' (Section 93, p. 29)

Thus a patron can lose the advantages of a post office close at hand in exchange for an infrequent delivery. Also in the case of section 93 the post office does not publicise the fact that mail can be picked up at the post office on non-delivery days, so that many patrons think that they can only get their mail on delivery, which may be two or three days after it arrives at the post office.

A patron is ineligible for rural mail delivery if living closer than a quarter mile from the post office, or if 'residing in a heavily populated area within the recognised boundaries of a village or town...' (Section 84, p. 27). The density of population above which the patron

is ineligible is not defined but at least the regulations permit some delivery within the incorporated area of such an anomaly as Bittern Lake which has an extremely low density.

Most of the rest of the regulations deal with procedures with which this study is not concerned.

The Camrose Area

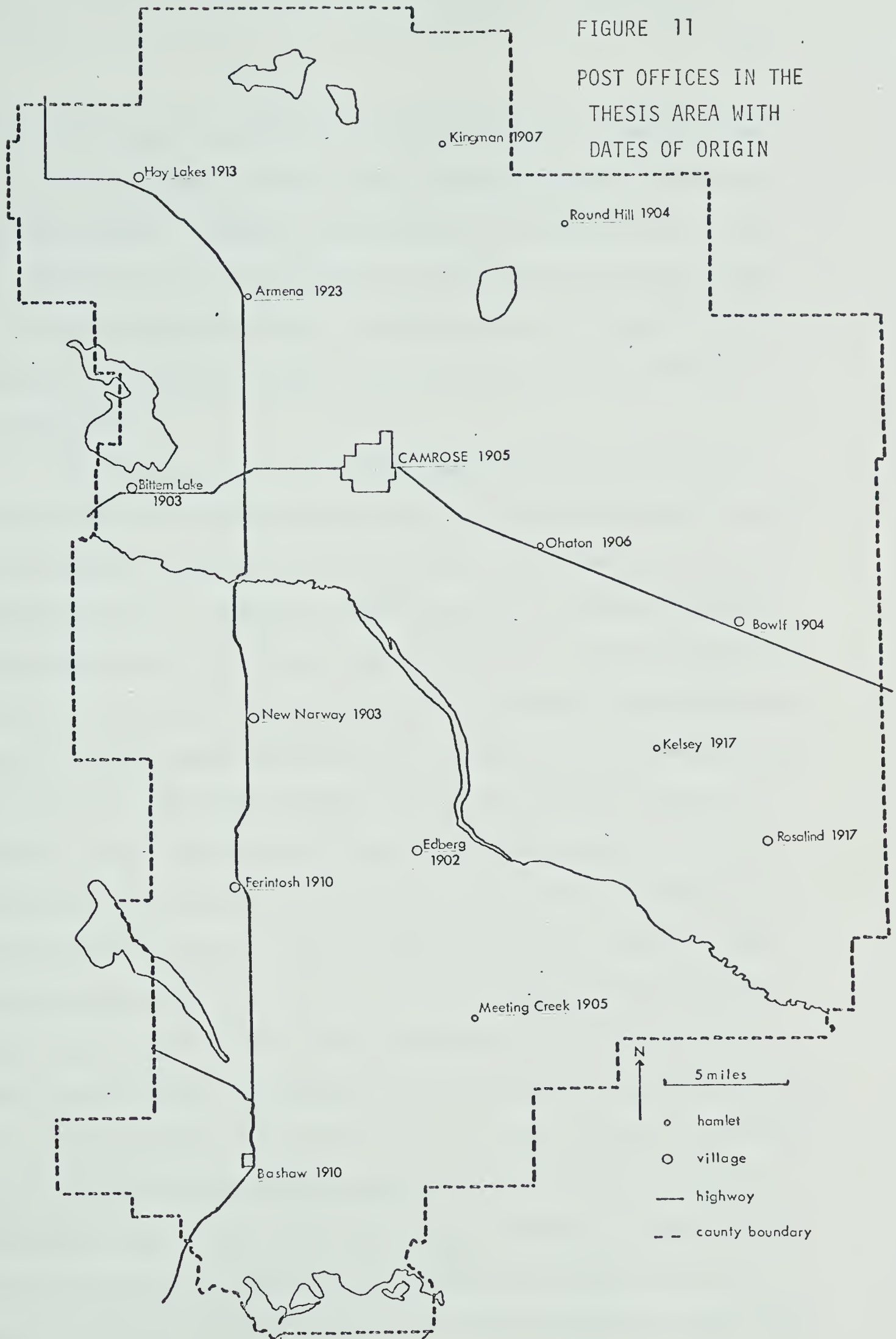
The information for this section was gathered by interviewing postal officials at the regional and local levels and by a section on the interview schedule and mail questionnaire. To some extent this was repetitive but different attitudes were revealed towards established facts. Some of the information gathered at the local level could, it was subsequently discovered have been obtained with less trouble at the regional level but because of the extra background information the exercise was not completely wasted.

The locations of the post offices in the County of Camrose, along with their dates of origin, are as shown in Fig. 11. The latter, it must be noted, are in some cases misleading. For example Camrose was known as Sparling until 1905 but its name was changed in 1905 at the insistence of the Post Office Department because it could be confused with a town with a similar name in Saskatchewan. Ferintosh was known as Little Beaver and then Lassen until the postal authorities demanded a change in name in 1910. Changes in names and locations of settlements and their post offices also confuse the issue in Edberg, Bittern Lake and Hay Lakes (Camrose Canadian 1957).

The earliest post offices in the area have mostly disappeared due to the settlement changes after the railroads were built. Duhamel

FIGURE 11

POST OFFICES IN THE
THESIS AREA WITH
DATES OF ORIGIN



(1892) which moved to a railway site before dying out, Dorenlee, Lundemo, Bardo and Heather Brae are among the post offices of which no trace now remains. Rosenroll, some two miles south of Bittern Lake was a major post office distribution centre before the railway came, with routes serving several post offices but it was bypassed by the railway and disappeared in 1910. All the present post offices are on railway lines.

The county is not a post office administrative unit because the Post Office is organised on a basis of federal electoral districts and the County includes parts of the Battle River, Vegreville and Wetaskiwin districts. Kingman and Round Hill are in Vegreville and Arm-ena and Hay Lakes in Wetaskiwin and the rest are in Battle River. This system of division is largely a legacy from the days of political patronage in selection of postmasters etc. which died out about the First World War but it has some elements of logic in that the system is, after all, federally operated so each M.P. should have some interest. Probably, of more immediate importance, is the fact that federal rid-ings are chosen so as to have an almost equal load. However, a pat-ron does not have to use a post office within his riding nor indeed need he use one within the county in which he lives, but for this study very few people were found to use post offices outside the county.

All of the electoral districts are within Edmonton Post Office Region, which, in area is the largest in Canada and serves right to the Arctic Ocean. Much of the sorting and delivering to post offices within the region is carried out at Edmonton as, of necessity, this has to be carried out mainly at night and only at a centre with a high

volume of mail can the expense of round the clock operation be justified. One sorter may clear about 1500 letters per hour so that a relatively small staff may handle the business of a large area.

Post offices in the area are served by a combination of Edmonton and locally based trucks. A truck travels from Edmonton to Camrose early in the morning and returns in the afternoon stopping at Hay Lakes and Armena post offices which are directly on the route. A local truck serves the post offices at New Norway, Ferintosh and Bashaw on the way to Mirror, some sixty miles south of Camrose. It leaves Camrose in the early morning, after the mail has arrived from Edmonton, and returns in time for the truck to Edmonton in the afternoon. Another truck performs a similar function for Kelsey and Rosalind en route to Alliance. Ohaton and Bawlf are served by an Edmonton-based truck serving post offices to Macklin, Saskatchewan and passing through Bawlf and Ohaton at 10 p.m. and 10.30 p.m. respectively going west and 2.30 a.m. and 2 a.m. respectively going east.

Bittern Lake is served by a Camrose-Wetaskiwin truck at 5.45 a.m. from Camrose and 6.45 a.m. from Wetaskiwin.

In all cases where the trucks run outside normal office hours the postmaster sorts the mail into marked pouches according to its destination and these are removed from a locked room in the post office by the truck driver.

Round Hill and Kingman post offices are served by the truck operating Camrose rural routes one and two.

Edberg and Meeting Creek have a service which is largely an anachronism. They are among the last of the offices in the region ser-

ved by rail, most other such services having been discontinued in the late 1950's. Because of an old contract, mail from the north must travel via Lacombe and Stettler by rail and from the south via Drumheller. For example a letter from Camrose to Edberg would go by truck to Edmonton, thence to Lacombe and Stettler and north to Edberg by rail, at considerable delay.

Because of the need to sort at Edmonton, a letter from Bawlf to New Norway would go to Edmonton rather than simply be diverted at Camrose but this causes no delay because of the timetabling of trucks and postal officials said that it caused less trouble to postmasters.

The Rural Mail Delivery - Local Origins

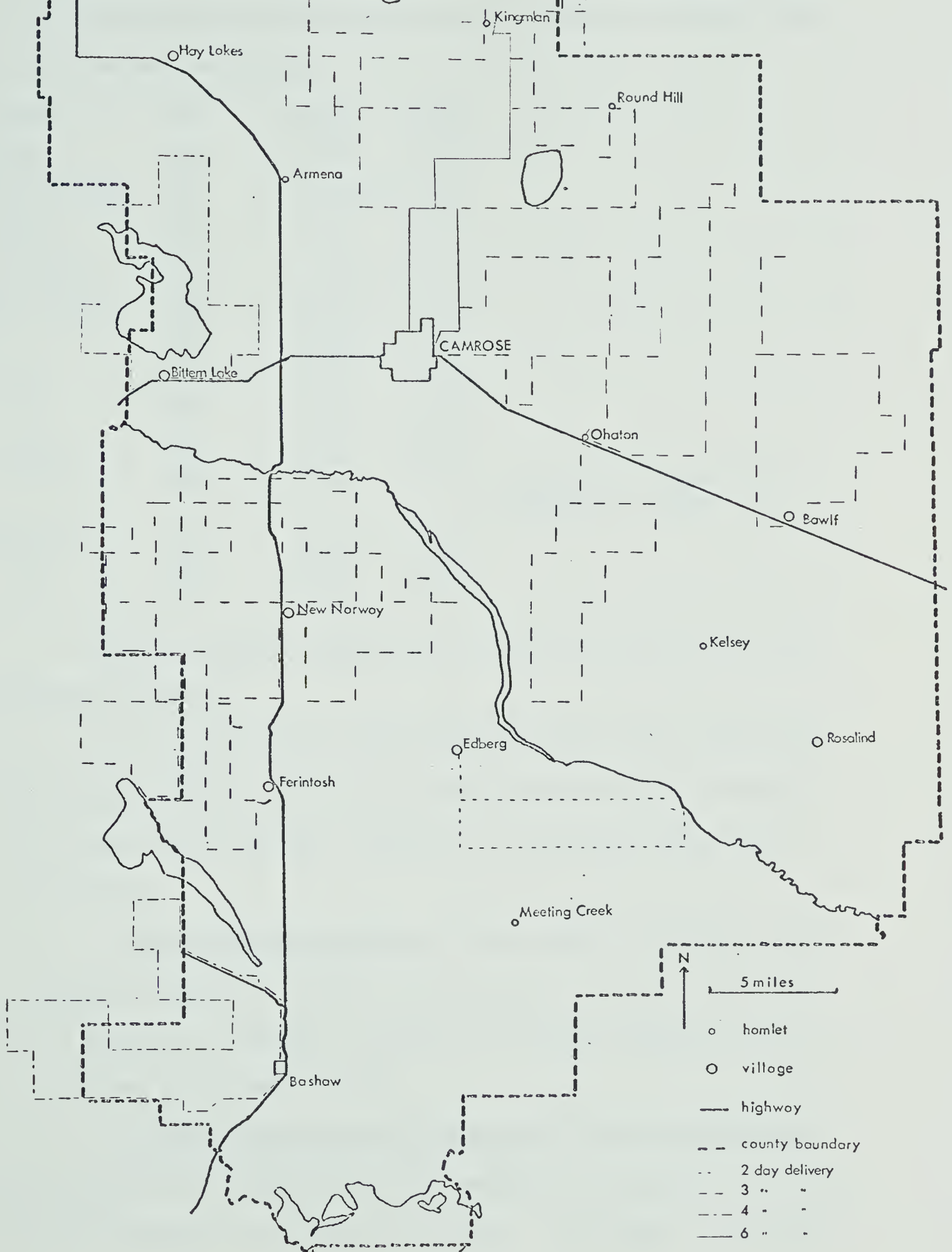
The origins of this service are somewhat obscure in Canada. According to a brief history of the Post Office it began in 1908 but in the Camrose area a local history states that mail was being delivered in 1905 and had been before that date. The postmaster at Bittern Lake thought that the present Bittern Lake rural route followed the basic path of an old horse-and-buggy route which began in 1905. However, this may have been a route serving sub-post offices from Rosenroll and which delivered mail, as well as freight and passengers, to farms along the route.

The present routes are as shown on Fig. 12. They came under the present contracts on the dates below.

These dates were supplied by Edmonton Post Office District who explained that they were only dates of new contracts. Those indicated by asterisks were completely new routes (though not necessarily the first from those offices). Thus, while these dates give little clue

FIGURE 12

RURAL ROUTES -
THESIS AREA



to the true origins of deliveries in the area, they do show the stability of routes once set up.

Bashaw	RR1	24 Mar.	1937									
Bawlf	RR1	2 July	1935									
Bittern Lake	RR1	8 August	1938									
Edberg	RR1	1 July	1937	..	..	..	..	..	..	..	..	*
Ferintosh	RR1	1 April	1937	..	..	..	..	..	..	..	..	*
New Norway	RR1	7 April	1937	..	..	..	..	..	..	..	..	*
" "	RR2	7 April	1937	..	..	..	..	..	..	..	..	*
Ohaton	RR1	1 Oct.	1938									
"	RR2	1 Jan.	1938									
Kingman	RR2	1 July	1935									
"	RR1	30 June	1937	- merged with Camrose RR2 - November 29, 1965								
Camrose	RR1	1 April	1943									
"	RR2	10 Nov.	1936									

Some of the basic statistics concerning the post offices are as shown in Table X.

It can be seen that a very high percentage of the patrons in the area are served by rural mail delivery compared with the provincial or post office averages, see Fig. 10. This may be due to several factors:-

a. High population density. As was noted in Chapter I, rural density is among the highest in the province so that a three day service at least is possible over much of the area (and was in the past when the routes were set up).

b. Origins of the people in the area. This is probably the main reason for the presence of rural delivery in the area, according to local postmasters and district officials. This works in two ways.

Firstly postal officials have noticed a tendency for people of Scandinavian origin to organise more than many other ethnic groups for rural delivery. The officials felt that it might be a valid generalisation to say that they co-operated generally. However, in this area the secondary origins of the settlers probably had more influence on the presence of deliveries. Many of them came from the United States from the 1890's until about 1910 after having found their original quarter section farms uneconomical. Generally they came from states such as Minnesota, Kansas, the Dakotas, and Nebraska. Rural free delivery in the United States was examined by Fuller who found that, from its beginnings in 1897 as a method of calming the rural voters after a market recession and bad harvests, the service had been allocated almost entirely on a political basis. At first petitions to congressmen were needed which tended to be dealt with in order of need of votes by the local Republicans, but later whole counties were given blanket service regardless of need or population density, again in Republican areas (they being the party in power). By 1904 it was noted (Fuller 1964, p. 65) that Kansas (Republican) had one route per 1300 people with a population density of only 18 per square mile while South Carolina had only one per 4500 people in spite of a population density of 44 per square mile.

Most of the settlers entering the Camrose area from the United States came from Republican States with established rural delivery so they not only expected it in Canada but were used to the raising of petitions and application of political pressure to gain it.

TABLE X

PERCENTAGE OF PATRONS SERVED BY RURAL DELIVERY - THESIS AREA

POST OFFICE	BOX PATRONS	RR PATRONS	% PATRONS ON RR	ROUTE MILES	DELIVERIES	1960 REVENUE \$
Armena	52	-	-	-	-	585
Bashaw	388	95	19.7	50	MTWF	7271
Bawlf	158	71	31.0	39	TThS	1958
Bittern Lake	40	71	64.0	33	MWFS	391
Camrose	130	39,120	55.0	28 45 73	MWF Split 6 day	68585
Edberg	127	34	21.0	25	W & S	1750
Ferintosh	89	103	53.6	69	MWF	1394
Hay Lakes	269	-	-	-	-	2212
Kelsey	56	-	-	-	-	474
Kingman	68	55	44.7	39	TThS	825
Meeting Creek	112	-	-	-	-	1333
New Norway	106	76,88	60.74	57 46	TThS MWF	2076
Ohaton	40	136	77.30	72	TThS	1254
Rosalind	139	-	-	-	-	1814
Round Hill	90	-	-	-	-	798
Total	1864	888	32.3 %			

M - Monday
 T - Tuesday
 W - Wednesday
 Th - Thursday
 F - Friday
 S - Saturday

Source:- Post Office Edmonton

This explanation seems particularly valid in the New Norway, Ferintosh and Bashaw areas and at Bawlf and Ohaton which were the earliest settled. Elsewhere there are less locally based routes (Camrose Rural Routes serve the north of the county rather than routes from local

post offices). Those post offices opened after 1910 at Armena (1923), Hay Lakes (1913), Kelsey (1917) and Rosalind (1917) do not have routes, presumably because the initial enthusiasm had died by then, and Round Hill (1904) is within the Camrose rural route area and is close to a route from Ryley outside the county.

Non delivery does not seem to relate to low revenue as Hay Lakes has no rural routes but has a higher revenue than some delivery offices.

Of the routes served, Bashaw, with just less than two households per mile is not quite entitled to its four day delivery but the post-master there thought that the regulations were flexible when near the limits and that if a route declined below its former density it would not be reduced in frequency. Similarly Kingman has less than 1.5 persons per mile yet it maintains a three day service. The Camrose RR2 is difficult to assess because it is a split route with only a three day service on the east and west loops of the northern section but a six day service on the southern section. Postal officials stated that the regulations are rigidly enforced on each of the sections to prevent complaints from those patrons with only a three day service. New Norway RR1 has a considerable number of spurs. This is due to several thefts of grain cheques from mail boxes in the past, which led to farmers asking for service to within sight of their houses. The post-master is not penalised in this case.

Route Structure and Operation

Within the area no guidelines as to shape of routes are offered beyond those in the regulations. Lengths of routes are subject to some

unofficial guidelines. A route should not take longer than three or four hours to travel round or be longer than seventy or eighty miles. This is so that ideally most of the mail is delivered by lunch time or the early afternoon, partly for the convenience of patrons, partly to avoid travel towards dusk in the winter and partly to make sure that the courier, who is often the postmaster, is not away too long. The latter point emphasises one of the main reasons for the continued existence of routes in some areas, namely, to provide sufficient income for the postmaster by granting him the delivery contract. Of seven rural postmasters interviewed only one did not operate the route and the others stated they could not run the post office on the salary alone. They felt that the service was an anachronism (three volunteered the information and the rest agreed) but that at least someone got some return for the money.

The postmasters all felt that weather hazards were relatively unimportant. One woman who operated a route in a 1960 Volkswagen said she had no difficulties. Another courier stated that he had missed only four trips in twelve years. One courier with a very long route used a four-wheel-drive vehicle but admitted that he had bought it for hunting rather than the route.

The Questionnaire Data

Of those replying to the interview twelve out of forty-two had rural delivery i.e. 28.6%. Of those replying to the mail questionnaire twenty out of fifty-three had mail delivery i.e. 37.7%. Only thirty-nine gave farm i.e. township and range addresses, and were eligible for delivery, therefore 51.3% of those eligible re-

ceived it. In the mail sample 39.5% of those theoretically eligible in both samples had rural delivery.

This was discussed in Chapter I.

Of those who had rural mail delivery all thought it an advantage - which is hardly surprising as it is easy to withdraw.

Of those with no delivery eighteen thought it would be an advantage though one lived in the hamlet of Kelsey and would have been ineligible unless the local post office was closed. One person interviewed felt strongly about not having a delivery because he had lived in Camrose for some years and had been used to a letter carrier service, but was unaware of the procedure to try to have a route started and in any case did not think his neighbours were interested.

Only two respondents living near routes, and using the post offices from which they originated, expressed desire to be served. Another person who thought delivery would be an advantage already had boxes at two post offices.

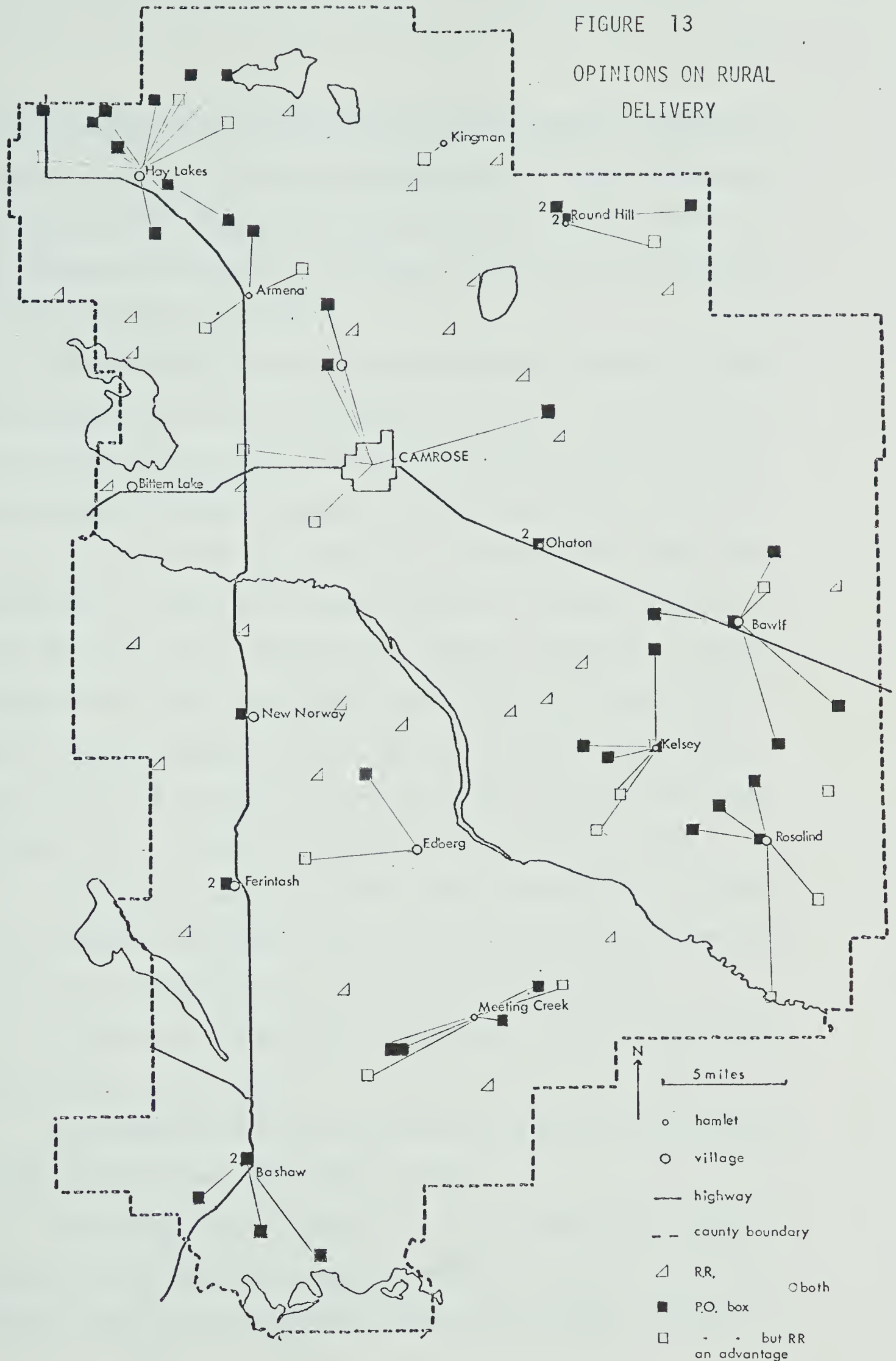
The distribution of opinion concerning routes is as shown in Fig. 13.

Seven persons living within one mile of routes do not use them and do not want to - one of them collecting mail from Camrose rather than taking it by route from Ohaton. However, this person was a special case, being a recent immigrant whose wife worked in Camrose and picked up the mail.

Twenty-four of those on mail routes answered the question about how the service could be improved. Of these thirteen indicated satisfaction, eight would have liked more frequent delivery, one would have

FIGURE 13

OPINIONS ON RURAL
DELIVERY



liked delivery later in the day, one would have preferred delivery on other days (curiously, this was at Edberg with the lowest frequency of delivery in the area, yet increased frequency was not suggested) and one would not specify. It is likely that those not replying did so because they were satisfied.

Of those collecting mail at post offices, eight went to where they shopped, thirty-nine to the closest, six went to a combination of the previous categories and ten went to others, usually the traditional address. Several farmers, in interviews, changed their answers to the latter when they thought more carefully and realised that a reluctance to change their address because of possible business and social disruption was probably a more important motive than shopping, closeness etc. Fuller had already noted this in the United States where 'A farmer's address like his name was so much a part of him that he was often identified around the county as Smith of the Stanley post office, or Brown of Arlington' (Fuller 1964, p. 154).

No one had a general delivery box as well as being on a route - an indication that people accept a choice between delivery and collecting, not realising that it is possible to combine them.

The average distance which respondents lived from their post offices was as shown below.

No replies were received from non-route patrons at Ferintosh, Kingman, Bittern Lake, New Norway or Ohaton.

An average return journey of seven and a half miles may not seem much but it must cause some inconvenience. Also it must be remembered that the average figure includes those persons living in

villages, towns and hamlets so that for the rural dwellers the distance would be greater. Offsetting this is the fact that most of the people would travel the distance for shopping in any case.

Not enough data are available to construct a complete map of service areas of post offices and the average distance may be misleading in some cases. For example the average for Bashaw is reduced by the high proportion living within the town while that of Meeting Creek is increased by the lack of hamlet dwellers in the sample. However, there does seem to be relatively little overlap and most people use their nearest post office, see Fig. 13. Also few people within the 'loop' of a postal route are not served.

TABLE XI - RESPONDENTS - DISTANCE FROM POST OFFICE

POST OFFICE	MILES
Armena	- 3.33
Bashaw	- 2.20
Bawlf	- 4.75
Camrose	- 7.14
Edberg	- 5.00
Hay Lakes	- 4.70
Kelsey	- 3.00
Meeting Creek	- 4.00
Rosalind	- 3.50
Round Hill	- 2.16
Average	- 3.73

The sources of the mail which the respondents considered most important were:-

local	5.7%
Camrose	16.0%
Edmonton	16.0%
Alberta	28.3%
Other	34.0%

Thus it can be seen that mail is basically used for longer distance communication. The question was phrased in terms of 'what did you miss most during the strike' (the mail strike of Summer 1968). According to postal officials, the dominant movement of mail is from the city to the farm.

For the type of mail a total of 142 responses were received:-

newspapers	47
letters	46
magazines	12
business	37

but 34 of these were accounted for by double responses:-

business and newspapers	5
letters and newspapers	10
letters and business	2

and another 44 by people who thought all four equally important.

The high importance of newspapers, which usually meant the Winnipeg Free Press Farm Weekly, helps to explain the 'other' in the previous responses. However, the closeness of responses for newspapers and letters is different from Fuller's findings (Fuller 1964, p. 295) for the United States, where, even in the 1920's, 75% of farmers in Missouri and Nebraska subscribed to daily newspapers. As will be seen later in the chapter on newspapers they are not nearly as common in the study area.

In interviews the respondents often passed comments on relatives in British Columbia and the West Coast of the U.S.A., often older people who had gone there to retire. These people were an important source of letters, those relatives remaining in Alberta usually com-

municating by telephone.

The low status of magazines is probably due to their entertainment function and also to the phrasing of the question, as it is likely that during the strike the farmers were too busy to read much. There was a slightly higher response in the mail questionnaire which was sent out during a particularly cold part of the winter when, presumably, reading material was at a premium.

There are only slight differences between rural delivery and post office box patrons, with the former favouring newspapers over letters (19 to 18) while the latter favoured letters over newspapers (28 to 22). However, letters were slightly higher from both sections on the mail questionnaire which may show that those who consider letters most important tend to reply to questionnaires. [Several persons noted that they missed nothing during the strike.]

In conclusion it seems that almost equal cases can be made out for and against rural mail delivery.

A major reason for its existence is undoubtedly to keep rural post offices in operation by providing a supplemental income for the rural postmasters. This seems to be recognised by the postmasters themselves. The fact that those who have it like it, while those who do not do not really miss it, seems to put it in a similar position to the school bus service in some respects in that it is hard to remove an accepted service.

In spite of the views of postmasters and patrons a high postal official when interviewed felt that a rural delivery was a feature which helped hold a community together and that in spite of the admin-

istrative trouble it caused, it was a worthwhile feature. However, one postmaster who had a delivery contract felt that it harmed the community because, as the patrons did not have to come into the village for mail they did not come in for shopping, going to Camrose instead and causing the closure of local shops.

It was suggested by a postal official that it is too easy for people living in the city to say that farmers all have cars and all use them for shopping so are perfectly capable of picking up their own mail. He noted that precisely the same argument could be used for urban dwellers who normally have letter carrier service and who have just as much access to transport. This argument seems satisfactory.

One apparent defect of the systems is that a vicious circle of isolation may appear. The system of petition for routes tends to favour areas with social cohesion (often with an ethnic base) which already tend to have good communications. It also favours those areas of dense population close to towns against those areas isolated by distance from towns and neighbours, where the journey to pick up mail would be most time consuming.

Because of the Loop System of routes the postal delivery is another service like the school bus as where linear and time distance from origin are not directly comparable. The couriers stated that patrons expect them to keep a very tight schedule and often wait for them to collect or post mail personally. They find relatively little difficulty in maintaining regularity and the weather causes little disruption.

The presence of inequalities does not seem to worry people in

the area. There is no correlation between distance from post office and likelihood of receiving mail delivery, and satisfaction or otherwise does not seem to vary with distance.

The total mail system in a rural area had a profound effect on newspaper reading habits. It is unlikely that so many people in urban areas depend so heavily on weekly newspapers and certainly not to such an extent on the mail for news. The infrequency of mail deliveries means that daily newspapers are not encouraged though there are other reasons. This major difference did not, according to Fuller, exist in the United States.

A possible criticism of the present service which was not mentioned by any respondents is that there is no delivery in villages and hamlets. While it is realised that this could pose great difficulties if carried out generally, it is notable that many of the respondents from such places indicated that they were old and retired. If it is becoming a pattern that small settlements are becoming largely retirement centres then it might be worth delivering mail to those who find travel for even a few blocks difficult, and who often do not have a car.

Thus, the rural delivery, while in many ways an anachronism, does have points in its favour which almost certainly justify its continuance and possibly its extension.

CHAPTER IV

TELEPHONES

The telephone is one of the most frequently used methods of communication, especially in Canada where the number of calls per person per year is the highest in the world. In spite of this there have been few geographical studies of telephone systems and most have concentrated on using statistics of telephone calls to investigate other matters rather than the telephone systems themselves.

This investigation was complicated by the lack of background information. Much of the operational technique is based on Bell Telephone manuals which are not available to the public and are, in any case, too technical. Textbooks deal mainly with receiver design, exchange design and signal strengths. The public relations staff of Alberta Government Telephones were helpful, but their function is chiefly selling business systems to large companies and their interest in, and knowledge of, rural telephones is comparatively slight. The engineering staff interviewed were extremely helpful but they had some difficulty in viewing large areas over time and in layman's language. However, it is from them that most of the information was derived. The staff of the district office in Camrose were not available for discussion. Old telephone directories are not retained by any libraries so that only generalised information was available concerning the past, mainly from reports of Alberta Government Telephones.

The geographical literature reveals very few studies and most of them are of Scandinavian origin. Illeris and Pedersen (1968) used

telephone traffic to try to indicate the existence of regional centres in Denmark. This study depended on the fact that all non-local calls went through operators. Törnqvist (1968) investigated flows of information and their importance in industrial location but was more concerned with physical movements of executives than any other features. He was trying to show that it was the need for communication which concentrated industries. Ajo (1962) noted that 'as a popular and expansive means of communication the telephone soon attracted the interest of geographers' but does not describe any studies made, or their results. He later noted that a reluctance on the part of the telephone companies to admit to a need for statistics has hindered quantitative investigation. His study of Finnish telephone markets was helped by the fact that local calls could be counted in the census. He showed that the demand for calls to Helsinki declined with a function of airline distance.

Ajo's techniques were not practical for this study because of lack of data and a different operational structure.

The Telephone In Alberta

In Alberta the telephone system was preceded only shortly by the telegraph which reached Hay Lakes in 1876 and was later extended to Edmonton. The first telephones were a mixture of private and municipal ventures but this became unsatisfactory as the networks expanded and had to be linked. For sometime long distance facilities were impossible, technically and administratively. By 1906 the Provincial Government was sufficiently concerned to acquire studies (Anon. 1906 and Dagger 1906) of the merits of private, municipal and governmental

ownership in light of the increased rates demanded by Bell telephones who had almost a monopoly of private systems in North America. These studies included investigations of municipal ownership in Glasgow, Hull and Portsmouth in Britain and of state ownership in Austria. The exact course of deliberations is unknown but by 1911 Alberta Government Telephones had been formed to operate telephones within the province, except in Edmonton and Banff, as part of the Department of Railways and Telephones.

This system persisted until 1934 when, during the Depression, the provincial government found it impossible to collect telephone bills in rural areas. These areas had never been profitable due to high maintenance costs but it was realised that the farmers depended greatly on the telephone, especially during the winter and the spring when roads were often impassible. A report was commissioned by an independent engineer who recommended that the telephone sets and rural line facilities be sold to mutual telephone companies with the government retaining control of the telephone exchanges and trunk lines and some of the urban lines.

The report was implemented immediately so that a rural debt of \$10,044,280 was written off (Province of Alberta 1934-35, p. 202). In the financial year 1st April 1934 to 31st March 1935 \$2,904,140 worth of equipment was disposed of or abandoned. The plant was effectively given away as the prices demanded seldom exceeded 5% of book value and even that was sometimes not collected.

Mutual companies were cooperatives set up under A.G.T. guidance to own and operate lines within exchange areas. Each operated

one or more complete lines i.e. lengths of wire which had no subscribers between the mutual boundaries and the exchanges. Any person not wishing to cooperate with his neighbours was disconnected. The method of operation varied, sometimes one member of the mutual undertaking all repairs for payment or remission of rental, or a communal effort in line repairs. Standards varied considerably, some areas having 'barbed wire lines', i.e. the fence wires carried the messages to avoid the cost of copper wire, insulators and poles, though at some loss in quality of service. Officials stated that some such lines still exist.

By 1940-41 the sale of rural plant was complete and 788 mutual companies served 17,096 subscribers (Province of Alberta 1940-41). The numbers of subscribers to mutuals rose gradually reaching a peak of 39,349 in 1966 though throughout the period the mutuals became increasingly less significant in comparison with the system as a whole - from 21.9% of telephones in Alberta in 1943 to 4.3% in 1968 (Province of Alberta 1951-52 and 1968).

In the post-war period dial telephones became available though much later in the rural than urban areas. With the automation of exchanges it became necessary to replace the existing magneto telephones, often running in cooperative or individually owned batteries, with dial telephones which each member had to buy. This raised the investment of each member of a mutual, with the rewiring often necessary, though government revolving loan funds with low interest rates eased the burden. From 68.6% of Albertan telephones in 1951 the proportion with dials increased to 99.4% in 1968 (Province of Alberta, 1951-2 and 1968), including such private systems as Edmonton city telephones.

The advances of automation have been reflected in a reduction in toll offices, i.e. exchanges with operators where long distance calls can be directed, from 217 in 1952 to 52 in 1968. Also there has been a reduction in the numbers of exchanges from a peak in 1961 and 1962 of 407 to 337 in 1968, due to enlargement of exchange areas with improved equipment (Province of Alberta 1951-52 and 1968b).

The dial system necessitated a reduction in the numbers of persons sharing a line to 15 or 16. In the past some lines had as many as 29 or 30. This reduction not only made it easier for a subscriber to get a free line, but it also cut down the amount of ringing as, on a party line, the telephone rings on all telephones at once, each subscriber recognising his own signal.

In 1956-57 buried cables were first used for toll services. These replaced the thick overhead cables which had been able to carry many messages but which suffered severely from icing in winter and damage to poles by farm vehicles in summer. The only cure for icing was to fly a helicopter low over the line to dislodge snow and ice by its downdraft, but this was expensive.

The possibilities of using buried cable for rural lines were investigated but the expense seemed prohibitive. However, a severe winter in 1963 encouraged re-investigation and it was found that cable costs could be reduced if a plant to manufacture cable was set up instead of importing from the United States. Such savings would only be possible if burial was made province wide. Other factors influencing the decision were the improved insulators available and new repeaters and amplifiers to avoid sound loss.

In 1964 the first rural cables were buried using mole-type ploughs mounted on bulldozers. The estimated cost was \$60 million for the province of which \$32.5 million had been spent by the end of the 1968 program when a total of 7,000 miles were buried bringing the total mileage to 32,710 (Province of Alberta December 1968). All the subscribers on these lines were not connected until some time in 1969 and figures are not yet available, but in 1968 27,000 subscribers were connected by 27,800 miles i.e. just over one mile per subscriber (Province of Alberta 1968). It was pointed out that:-

'Not all rural areas can be practically converted to underground cable. In districts where subscribers are scattered several miles apart, cable is not economically feasible. The cost of extending cable many miles is prohibitive. Therefore, open wire lines will continue to be constructed.' - (Province of Alberta 1968b)

For those areas in which the burial scheme was practical it was necessary for A.G.T. to take over the mutual companies. This is because of scale economies in laying, the need for new equipment which is compatible with full automation, and because the need for mutuals i.e. rural depression, had largely disappeared. (There are no indications of scale economies in mutuals as no records of investment, monthly rates etc. are available. A bigger system would probably lead to economies in materials but this might well be offset by the need to employ staff. There is also the likelihood that subscribers would expect better i.e. more expensive, service from bigger companies).

Because this was one of the few occasions when the decision-making process could be discussed with those directly involved, and because the procedure is likely to be unrecorded elsewhere, the stages

in change-over from mutual to buried cable service are described in some detail below:-

1. An order of priority of exchanges is made, on a basis of the present compatibility of the existing mutual system with the provincial network. Thus an exchange served by mutuals with recent equipment and giving satisfactory service receives a low priority. The highest priority is given to those areas with no telephone service.

2. An official of the rural development office of A.G.T. in which the area lies explains the proposed changes to secretaries of mutuals. Their agreement is required because a mutual cannot be forced into liquidation. In practice, refusal is rare, but this has happened in Southern Alberta. In such cases the mutual area is by passed with the understanding that, if future developments result in incompatibility of equipment, the service will be withdrawn entirely.

3. A survey of the area is made, interviewing as many present and potential subscribers as possible. This is necessary because some people not served at present may wish to be served by buried cable while others may be moving away leaving a farm uninhabited. The route network is planned on this basis with the general principle that, if there is any doubt, a pedestal (take off point) is installed because it is very expensive to search for the cable and splice one in later.

The survey also notes any preferences for areas to which the subscribers prefer to be linked. It is usually a condition that a mutual area must remain on the same exchange but this is sometimes changed if it is technically feasible and all subscribers want a change - for example to connect them with the centre where their children's

schools are located. As the buried cable system has four parties per line, subscribers are asked whom they would prefer to share with and this is respected as far as possible. This is important for several reasons. As the telephone rings in two out of four homes there can be considerable disturbance to anyone sharing with a person who uses the telephone frequently or at peculiar times. Also, if two subscribers mainly call each other it creates less disturbance if they share a line. The party line results in lack of privacy and some subscribers may be averse to sharing with certain others.

4. With the survey complete the network is then plotted.

While it is obviously wasteful to employ many more miles of cable than are necessary this aspect can be exaggerated. No set pattern of routes is used though road allowances are followed by the cable ploughs except in some lightly settled areas. Some mileage could be saved by cutting across country but this would be at the expense of breaking fences, ruining crops and burying the cable in areas where it would be difficult to find for inspection. This would cause delays in burial which would be critical as the season is kept short because of the need for freedom from frozen ground or flooding in the road allowances. In a good day 40,000 feet can be laid, thus the losses due to man and machinery standing idle are high. Because the depth of burial is two to three feet the risk of damage would actually be less under a field because ploughing rarely goes so deep while utilities and pipelines, which share the road allowances, often do.

An unusual difficulty noted in the Wetaskiwin - Camrose area was that gophers ate the cable insulation (Province of Alberta 1965).

An official when interviewed was of the opinion that, while the decision to change to buried cable was 'political' and was mainly aimed at giving reliable service, it is quite possible that it will be much cheaper in the long run. Quite apart from lower service costs due (hopefully) to fewer breakages, the costs of telephone poles has been rising very rapidly and the supply is likely to become critical.

Advantages

a. Reliability. By making the system less prone to damage by icing, the facility is unlikely to disappear when it is needed most. By taking the maintenance away from communal or part time labour, defects are likely to be rectified more quickly. At present if a line breaks during harvesting it may not be repaired for weeks.

b. Privacy. By standardising on a four party maximum the rural subscriber will be placed on a similar footing to urban subscribers. The result of this has been seen in several areas where the number of toll calls rose to over three times that on the mutual system over the first two months though it usually dropped back slightly.

c. Freedom from Noise. The old system was very noisy though most people grew accustomed to it. However, it did discourage the use of the telephone at night except in emergencies as a sleeper could not be sure whose code had rung. This also infringed on privacy.

d. Increased availability. While many mutuals acquired their equipment very cheaply costs of improvements rose and hence so did members' investment. Thus any person wishing to join might be faced with a considerable cost either in terms of a share in the cooperative or an installation charge. This could be a deterrent to owning a telephone.

In some areas the lines were simply full, i.e. they had 15 subscribers. Unless many more subscribers were forthcoming to cover the cost of an extra line it would be a burden on the whole cooperative.

The increase of availability is shown by the fact that in 1968 buried cable was extended to 8802 existing subscribers and 3428 new subscribers (though some of the new subscribers may have been recent arrivals in the urban fringes).

The costs of the A.G.T. installation are \$4.50 except in special circumstances i.e. the same as urban rates.

Disadvantages

a. Cost. For a person already in a mutual the burial program would mean a loss of investment as his old equipment might well be worthless, though all the mutual equipment is turned over to the shareholders to dispose of for whatever they can get. Also the monthly rate is almost invariably higher for A.G.T. than mutuals - a common mutual rate was about \$2.00 per month compared with A.G.T. rates as below:-

0 -	500 subscribers on exchange	\$4.25
500 -	1,500 " " "	\$4.50
1,500 -	10,000 " " "	\$4.75

Source:- Alberta Government Telephones

The reason behind such costing is that a subscriber on a large exchange has such a great choice without paying long distance charges which he would on a small exchange.

b. Inability to interrupt a conversation. Some people missed being able to interrupt with an urgent message.

In general the advantages far outweigh the disadvantages.

Exchange Areas in General

The reasons behind individual exchange areas vary considerably and often are lost in the past but some constraints exist.

For buried cable there is a limit of about 30 miles from the exchange to the farthest subscriber. This is shorter than the limit for open wire because the wires in buried cable are finer and hence have the higher resistance of 30 ohms/mile compared with 10 ohms/mile for open wire. However, open wire does not necessarily have three times the range because of voltage leaks at the poles. In practice the quality of service required poses the major restriction and it is the association of high quality burial which is mainly responsible for the 30 mile limit. (An analogy may be made with the transatlantic cable where morse was possible in the nineteenth century but insulation and booster improvements only made speech possible in the 1950's).

On the buried cable, amplifiers are necessary every 10 miles and simpler repeaters every 4,500 feet. Because of this, burial is restricted to those areas with electricity, unlike some of the older systems which would work with individual or communal batteries.

In practice, in the settled areas of Alberta there is seldom any need to have subscribers as far as 30 miles away from exchanges.

There is no minimum number of subscribers per exchange in theory but a working minimum of about 50 is used. Neither is there a maximum, though the rate structure tends to limit the exchange size in many cases. However, with the agreement of the subscribers it is possible to give extended area coverage i.e. toll-free calls on two or more adjacent exchanges, if the subscribers are prepared to pay the monthly

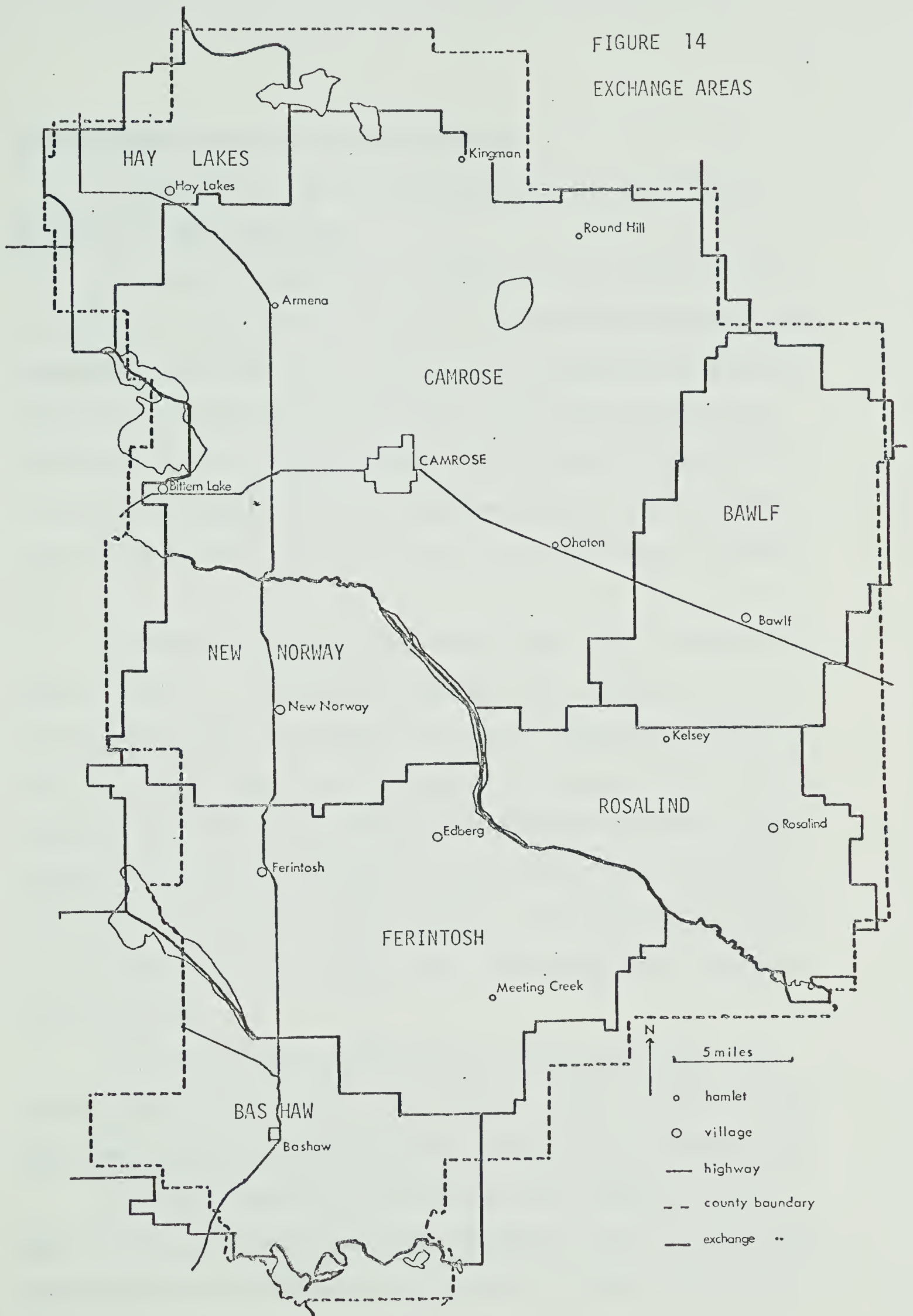
rate appropriate for the combined numbers on the exchanges.

Some physiographic boundaries may be imposed on exchanges. It is difficult to cross marshy areas or lakes or large river valleys unless there are bridges or causeways so in their absence such features mark the limits of exchanges. This occurs in the thesis area at Driedmeat Lake.

Toll centring is the method of directing long distance calls in the province. Each exchange is attached to a toll centring office and all toll calls pass through it. It thus has staff to compute costs to each subscriber. It also has operators for calls not handled by the automatic exchanges. The number of such offices has been reduced from 217 in 1952 to 52 in 1968 (Province of Alberta 1968b) as automation has increased and as microwave systems have taken over from wires in many long distance services. Toll centring is efficient in terms of reduction of overheads, especially with nearly 48% of the 34,786,774 long distance calls in 1968 being connected automatically. (Province of Alberta 1968).

The exact influence of toll centring on subscribers is difficult to assess. Rendall (1962, p. 85) noted that calls were charged on a basis of distance of subscriber to the toll centre plus distance from there to the destination via the other toll centre. An official interviewed was reluctant to discuss rates, but agreed with this generally. It was subsequently discovered, in discussion with another official, that both Rendall and the author had been misinformed and this was verified by examination of rates published in directories. The rates are established individually from each exchange to all others

FIGURE 14
EXCHANGE AREAS



and vary approximately with direct distance.

Thus the system can only be beneficial to the subscribers.

Telephones in The Thesis Area

The dates of origins of the telephone systems within the area are not known, largely because they were developed independently around communities. Some indication of the extent of telephones is given by the fact that in the early 1900's about 1/4 of the province's telephones were centred on Camrose and by 1914 there were 904 subscribers on the local exchange, 301 in the towns and villages and 603 farmers. Between 1907 and 1914, 734 miles of poles were laid (Camrose Canadian 1955).

The extent of the exchanges in the thesis area in 1968 are as shown in Fig. 14. As can be seen, Bashaw, Bawlf, Camrose, Ferintosh, Hay Lakes, New Norway and Rosalind lie almost completely or completely within the county. They are all connected to Camrose for toll centring. Peripheral areas are served by Daysland, Donalda, New Sarepta, Ryley, Tofield, and Wetaskiwin exchanges but such small areas are involved that they may be ignored for most purposes. This would seem to indicate that the county and exchanges had a common origin as an aggregate of service areas.

Of these exchanges, New Norway and Bashaw had already been switched over to buried cable. Hay Lakes was ready to change and Camrose, Bawlf, Rosalind and Ferintosh were scheduled for burial in 1970.

The exact reasons for the borders of the exchanges are uncertain. Service areas are necessarily approximate and it is likely that details were due to expediency or availability of line. Some physio-

graphic determination is evident on the edges of the Battle River at Driedmeat Lake but it is likely that the unbridged areas represented a barrier to friendships and hence there would have been reduced desire for local service. However, a common feature is that the borders run through the middle of sections. This is because the wires have always run along the roads and also because neighbours would usually wish to be on the same line. This demonstrates pragmatically the idea which had been determined theoretically in political geography that boundaries should be through unsettled areas but, above all, not along routeways.

Extended area service is in operation between Bawlf and Rosalind and Camrose and New Norway. Hay Lakes has a similar service with New Sarepta just North West of the thesis area.

The numbers of subscribers in the exchanges are as follows:-

TABLE XII - SUBSCRIBER/BURIED MILEAGE

	TOTAL	BURIED	MILES
Bashaw	522	222	196
Bawlf	259		
Camrose	517		
Ferintosh	324		
Hay Lakes	168		
New Norway	233	169	137
Rosalind	123		

Several points may be considered concerning the above:-

1. Rosalind and Bawlf exchanges receive their extended area coverage free because the combined totals are less than 500 subscribers.

2. New Norway subscribers have to pay extra because they have extended area coverage with Camrose.

3. Hay Lakes does not have to pay extra for extended area because the combined number is only 355, including New Sarepta.

The total figures were taken from the 1969 telephone directory except for the Camrose figure which had to be derived from a map provided by the Rural Development Office in Red Deer. This was necessary because the directory does not distinguish between rural and urban, and only the latter were required. However, the numbers of subscribers on buried cable at Bashaw and New Norway was provided by the engineering department of A.G.T. with figures for Daysland, New Sarepta and Ryley for comparison:-

Daysland	233 miles	252 subscribers
New Sarepta	166 miles	222 subscribers
Ryley	167 miles	175 subscribers

The number of subscribers per mile of cable was 1.13 in Bashaw and 1.23 in New Norway which compared with 1.4 in New Sarepta, 1.13 in Daysland and 1.05 in Ryley. While no population density figures were available for the exchange areas as such, the less densely settled areas have fewer persons per mile. The provincial average was about 0.97 per mile for 1968.

Hay Lakes and New Sarepta are effectively merged because an engineer interviewed was not aware that a burial program had taken place there. His figures for New Sarepta buried subscribers were more than the total listed in the Directory.

Only subscribers living outside nucleated settlements have bur-

ied lines so the comparisons of subscribers per mile are valid.

A System of Mutuals in Detail

It was impossible to gather information about all the mutual exchanges in the thesis area but a map of the mutuals in the Camrose exchange area was obtained showing the lines and the locations of subscribers. The extents of the mutuals are as shown in Fig. 15. The numbers of subscribers are as shown below, each separate figure referring to a line with maximum capacity 15.

Some persons are not served by the same line as their neighbours but by an extension, sometimes several miles long, of another line. This is because, when a line had reached full capacity (15) latecomers to the cooperative had to pay the penalty of a long extension. Heather Brae is only three subscribers short of saturation and Ohaton, serving the hamlet of Ohaton, is completely saturated with fifteen subscribers on its one line.

The map reflects the complexities of rural relationships during the Depression. Ohaton Independent is split in two by Ohaton, presumably because the latter served the hamlet at less expense.

All the mutuals are crossed by railways, along which most of the provincial lines used to run to connect them to the exchanges though the buried main lines all follow roads for ease of access.

The Questionnaire

The aim of the questionnaire was to obtain information on the extent of mutuals compared with A.G.T. lines as well as to establish patterns of use of the telephone. At that time attempts to obtain any of this information from A.G.T. had been completely unsuccessful.

FIGURE 15

MUTUALS ON THE
CAMROSE EXCHANGE

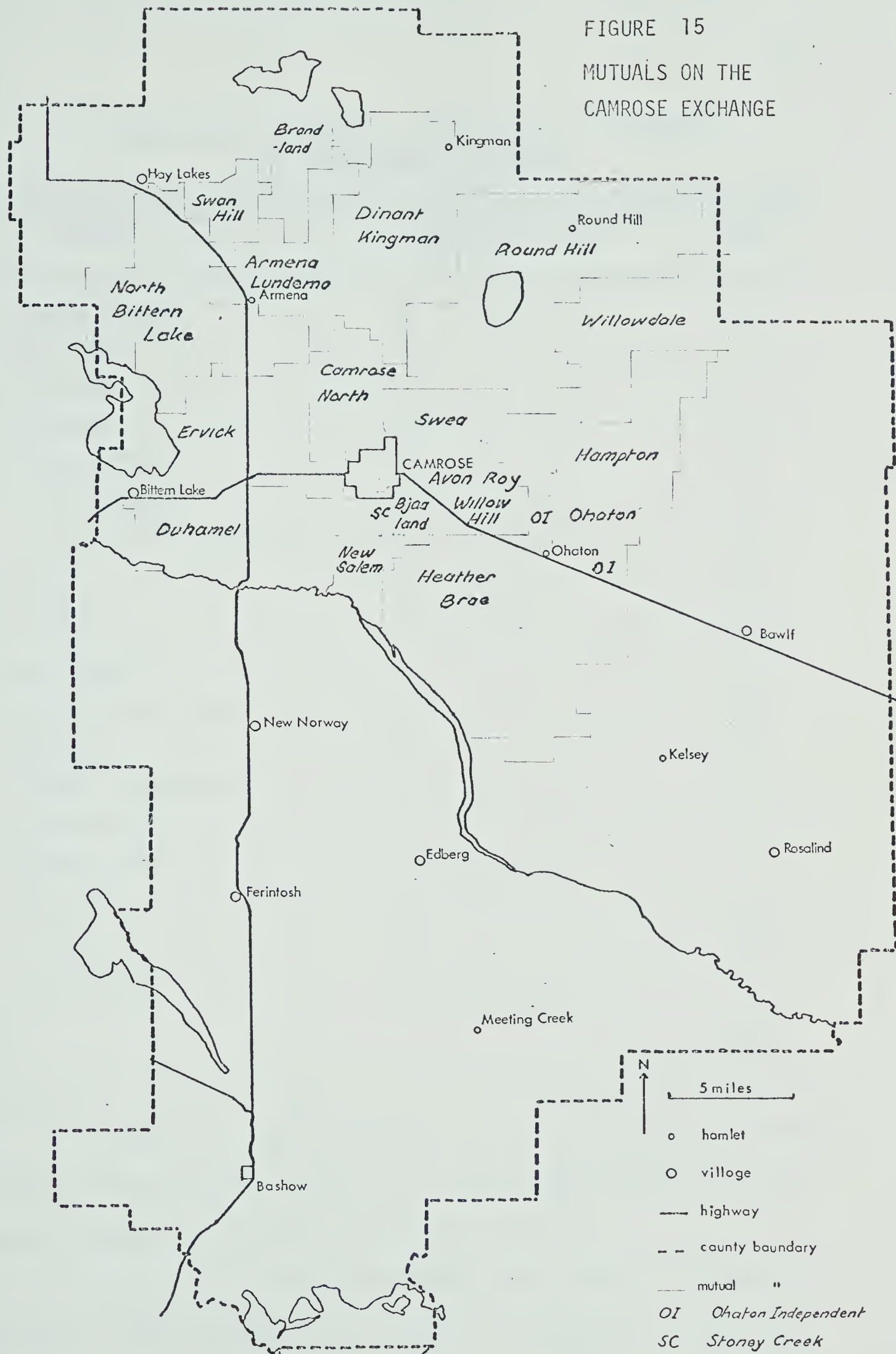


TABLE XIII - NUMBERS OF SUBSCRIBERS IN MUTUALS
IN THE CAMROSE EXCHANGE

MUTUAL	NUMBERS ON LINES				TOTAL
Armena Lundemo	10	9	12	14	45
Avon Roy	14				14
Bjaaland	7				7
Brandland	15				15
Camrose North	8	6			14
Dinant Kingman	15	14	15	7	51
Duhamel (North of River)	10	12	11	12	45
Ervick	11	10	12		33
Hampton	14	9	12		35
Heather Brae	15	13	14	15	72
New Salem	10				10
North Bittern Lake	13	15	11		39
Ohaton	15				15
Ohaton Independent	9				9
Round Hill	13	12	11	12	48
Stoney Creek	7				7
Swan Hill	not applicable				-
Swea	14				14
Willowdale	13	10			23
Willow Hill	not applicable				-
					495

The question, "Are toll calls mainly to or from one place" was somewhat unsatisfactory as most of the interviewees were uncertain of answers and most of the mail respondents ignored it.

The rest of the questions produced quite similar responses among both types of respondent, therefore, a breakdown is only given

where it seems to be of importance.

Eighty-four respondents had telephones and twelve i.e. 12.5% had not. This compares with the D.B.S. estimate of 10.7% of the Provincial households without telephones. All except two of those without telephones were in areas served by mutuals, where cost was almost certainly a discouragement to installation. Two were in the hamlet of Ohaton where saturation was noted before and two were in hamlets with easy access to public telephones.

Seventy-one respondents stated that for outgoing calls local calls were most important, six with toll calls most important and with nine about equal. For incoming calls sixty-seven thought that local were most important, five toll calls most important and eleven about equal. This shows that the telephone is essentially a short range communications medium - unlike the postal service. Of those listing toll as most important, five were in the Ferintosh exchange area, two in Rosalind, two in Camrose, one in Bawlf and one in Hay Lakes. The Ferintosh group is explicable by the proximity to Bashaw. One of those in Rosalind was due to a young daughter at school in Edmonton. Those in Camrose were just on the exchange boundary near Round Hill and the response in Hay Lakes belonged to a 'suitcase farmer' from Vancouver. Of those giving equal prominence to toll calls the majority were on the edges of the Camrose exchange.

Thus those exchanges removed from the towns have the most toll calls. Whether or not there is buried cable seems to have little influence.

The most frequent use of the phone was social with sixty-four

responses, followed by twenty-eight 'others', twenty-one repairs, and only six shopping. 'Repairs' included all kinds and these will probably increase as car and machinery dealerships become restricted to larger towns. This bears out what an official suspected i.e. that the telephone is largely a release from social isolation. This official, who was British, felt that the Canadian system of free local calls was socially more desirable than the British system of charging for all calls.

The number of calls per day was investigated in the hope that it might reveal some relationship between use and isolation but this was not the case. However, there was considerable (and justifiable) uncertainty about how often the phone was used. Sixty respondents stated 0 - 5 times, nineteen answered 5 - 10, three 10 - 15 and one more than 15. There was consistency between the mail and interview responses. Those living in buried exchanges seemed to use the telephone slightly more, possibly an indication of the lack of nuisance to neighbours but the difference is not significant.

The responses to the question 'who uses it (the phone) most' were very similar in both types of response. Thirteen replied 'men', forty-seven 'women', five 'children', thirteen men and women equally, two women and children, and four all equal. That women should be in the majority might have been expected but the very small proportion of children suggests that the uses are very different from in towns where it has become almost a truism that children use the telephone most.

Interviews revealed that it is somehow considered reprehensible to use the telephone. Many farmers were quick to make it clear that

their wives used it most. Respondents seemed proud of using the telephone less than five times - 'we don't gossip' was a common response in interviews. Perhaps this is due to the disturbance on mutuals or the fact that long conversations may block the line for important messages. It would be interesting to compare this situation with an urban area.

An issue which could not be explored was whether the numbers of calls between points could be related to distance. An inverse square relationship was suggested by Ajo (1962).

This was explained to an official who was generally sympathetic but felt that the present state of flux between mutual and A.G.T. systems would make it useless. He also pointed out that the theory might be possible under European systems but that the toll centring system in Alberta would make it unworkable. Certainly Rendall had noted a reluctance to call areas just outside the local toll centring area because of the expense. It was thus felt that a search for the number of calls (which would only relate to Camrose) would not have been worthwhile, especially in view of the lack of cooperation of the Camrose office.

A pre-burial census for a week in 1960 revealed that numbers of calls did indeed fall off with distance, though the exact relationship could not be plotted in the absence of total figures for subscribers at that time. It also showed that calls tend to be mainly from the smaller to the larger settlements i.e. more calls from Camrose to Edmonton or Calgary than vice versa and more calls from such smaller centres as Ferintosh or Bawlf to Camrose than vice versa. The official

interviewed felt that this was a general rule throughout the province.

Conclusions

The telephone is potentially the most immediate means for a rural dweller to communicate over long ranges but in practice its use is largely restricted to short ranges. It was, at one time, locally organised, but centralisation, through the provision of improved privacy and reliability, has increased its local utility. It is a curious feature that privacy i.e. voluntary isolation, can reduce involuntary isolation, caused by a reluctance to use mutual lines.

With the time element removed by the instantaneous nature of telephone communication, isolation must be regarded in terms of privacy and cost. The latter is difficult to evaluate as it is impossible to tell to what extent subscribers are deterred from making long distance calls by their cost. The influence of the toll centring system as a feature distorting linear distance is especially difficult to assess in the thesis area.

The major importance of the telephone in Alberta may be seen from the fact that in 1967, 45,000 households had no flush or chemical toilets yet only 44,000 had no telephones. Fifty-five thousand had no baths. Telephones are almost as common as piped water (All from D.B.S. estimates 1968). Thus telephone communication is accorded one of the highest priorities among domestic needs in the province.

CHAPTER V

NEWSPAPERS

This chapter attempts to examine the types of newspapers read in a rural area, the variations in pattern of readership where they can be seen and the spatial interests of readers.

The Literature

A study of the influence of newspapers in communities in the United States noted that:-

'Newspapers (and other media) are so much taken for granted, touch so many facets of community activity, that the press is like the wall of a house - it's there but it is seldom necessary to mention or describe it' - (Sim 1967, p. 276)

This could well describe the interest which geographers have taken in newspapers. Marble noted (1967) that connectivity of people is due to age, personality, sex and education to such an extent as to make geographical factors such as distance and physical features negligible, but, as previous chapters have shown, there are local differences in communications facilities and differences between town and country. These may be institutional or they may be partly due to differences in age, personality, sex and education but they undoubtedly exist. Haughton (1950) studied the sales areas of weekly newspapers in Ireland and concluded that:-

'...the circulation area of a newspaper bears at least some relationship to the market area of the town in which it is published. Second, the newspapers show clearly the intense interest in farming and housing, both of which are vital issues in a rural community. Third, in several cases, the limits of newspaper circulation areas are county boundaries: this indicates that even if a county

boundary bears little relation to any division on a basis of natural regions it has an administrative significance that has given it some social and economic importance' p. 44.

Some of these features will be examined in the context of the thesis area.

Sales areas of city newspapers were also included in Murphy's study of the American city (Murphy 1966) and Smailes used them as indices in definition of urban fields (Smailes 1947).

Many of these applications were derived from Park's paper 'Urbanisation as Measured by Newspaper Circulation' which showed that:-

'the circulations of the newspapers, when they are plotted on a map, serve to delimit, with exceptional accuracy the limits of the local trade area, and to measure at the same time the extent and degree of dependence of the suburbs upon the metropolis and of the metropolis upon the larger area which it dominates' p. 62.

The general approach has been to treat newspaper readership in terms of service areas like any other commodity. Park did seem to be aware of the idea of gradation of intensity of readership:-

'Newspaper circulation may be represented schematically in a succession of concentric circles, defining a series of zones - zones of declining circulation, since newspaper circulation, like land values, tends to decline in regular gradients from the centre of the city to its circumference; and from the city itself to the limits of the metropolitan area' - (Park 1929, p. 62)

However, he based these ideas on a study of newspaper sales, as supplied by the newspapers, for towns around a metropolitan area (Chicago). He did not examine the patterns within the rural areas. He was also dealing with the United States which, as will be seen later, differs considerably from the thesis area in spite of some similarities in

economy and settlement type.

For newspaper sales it is necessary to apply some sort of gradation because, unlike many commodities studied, a newspaper may not be classed as a necessity. On the other hand it is not strictly a luxury in terms of price. A newspaper is a 'perishable' commodity, but unlike many perishables there is no way of preserving the usefulness of its contents though to stretch the analogy further, there are differing personal tolerances of decay - some people regard a newspaper a day old as being as bad as no newspaper, while others will read one four days old.

As most newspapers can supply a breakdown of sales by settlements these figures seem to provide an excellent basis for geographical study. As will be seen later this impression may be completely erroneous, thus the usefulness of newspapers as a quick method of delimiting trade areas or areas of influence may be greatly reduced.

Newspapers are mass media as distinct from the personal media considered in the previous chapters. The individual is not considered directly in terms of supply or content. Each newspaper has a known format which does not vary much with time and presumably it is partly on this basis that the individual decides to buy it.

It is with content that most researchers in mass communications have concerned themselves. Schramm in America (Schramm 1960 and 1964), Williams in England (Williams 1966) and McLuhan in Canada have examined the relative amounts of news coverage, treatment of specific issues, influences of newspapers and development of the medium without considering the preferences of readers in specific areas and how these

are satisfied by newspapers. This is quite understandable. Most of the populations of the countries in which researchers have been active, are urbanised and it is unlikely sheer locational factors are of great influence to readership within urban areas. Most sales of large newspapers are in urban areas and hence the newspapers are interested in cooperation with researchers in content which is probably the chief variable determining sales. Also large issues are likely to be treated by several urban newspapers and hence comparisons are valid whereas rural issues are likely to be discussed by only the local newspaper.

As newspapers are not a function provided by a centralised agency but rather a matter for the individual i.e. no agency provides a framework specifically for access to them, this study must begin directly with the area.

The Weekly Newspaper

Two main types may be distinguished:-

- a. The sectional or interest group weekly, and
- b. The local weekly

The former appeals to a large area where people may be expected to have a community of interest either due to location per se or to occupation or tradition associated with the area. Examples of this type are the Winnipeg Free Press Farm Weekly which, while national in scope, publishes Prairie editions specifically aimed at farm people in Western Canada. The Western Producer is another paper of this type.

These papers generally emphasise the farming way of life and their 'politics' tend to be pro-farming interest rather than for specific political parties.

The local weekly newspaper is what its classification suggests, purely a supplier of news about people and events within its sales area with little commend on wider issues except as they affect the readers directly. It is a much smaller operation in terms of staff and organisation and it may well be combined with general printing and advertising. The existence or otherwise of set policies is likely to be less emphasised.

The Winnipeg Free Press Farm Weekly

This is sold totally by mail subscription from Winnipeg and the total sales in Alberta in December 1968 were 89,731. This compares with 69,411 farms in Alberta shown that many non-farmers also buy it. Within CD 10 - the census district within which the thesis area lies - there are 10,001 subscribers and 9440 farms, according to the Circulation Manager W.F.P.F.W.

An examination of numbers of subscribers compared with numbers on post office directories shows a considerable variation of intensity of readership within the thesis area. In Round Hill only 53.3% of the listed householders are subscribers but in Bashaw, with a much higher proportion of the householders living in town rather than the farm, 73.5% read the Weekly. An examination of proportions on rural delivery compared with general delivery shows that this has little influence on sales. New Norway R.R.1 has 85.5% while the general delivery has only 61.3% but in Bittern Lake the position is reversed with only 36.1% on R.R.1 and 87/5% on general delivery. Similarly there does not seem to be any clear connection between distance from Camrose and percentage of post office patrons taking the Free Press.

Readership of the Farm Weekly seems to be a matter of habit to a large extent. Several interviewees observed that 'of course' they read it, as it was part of rural life. This stems probably from its ownership by the Sifton family, one of whom was the Minister of Immigration largely responsible for settling the west and who is commemorated in the naming of the County high school.

With 88.1% coverage among the interview sample it would be pointless to show spatial variation as other factors seem likely to be more important. (Among the mail sample too many did not specify which weekly was read to use them in this section). Of the five not taking it, one was self-consciously different in his reading habits, one worked in town, one borrowed it from relatives, one was the only immigrant interviewed (from Denmark) and thus had no tradition of buying it, and another was unusual in taking correspondence courses. One respondent observed that it was rather hard to give it up as it kept arriving after the subscription was cancelled!

The Western Producer

This was taken by eighteen out of forty-two interviewees. With a total subscription in Alberta of 43,391 the proportion of the sample reading it compared with the Farm Weekly is approximately as expected.

Other farm weeklies mentioned by respondents included the Cattleman (1), Good Farmer (1), Family and Ranch Review (1).

A general survey of farmers' attitudes in Alberta carried out by the Farmers' Union of Alberta (F.U.A. 1967), showed that only 1% bought no farm papers and 64% get four or more, but many of these are less frequent than weekly and for other reasons would not be classified

as newspapers.

Local Weekly Newspapers

This is the type discussed by Haughton in Ireland and the functions remain remarkably similar in Canada. The Camrose Canadian is the chief newspaper of this type in the thesis area. Founded in 1907 its first editor was politically minded, subsequently becoming a Liberal M.P. but its political function has since largely disappeared.

Thirty-four respondents out of forty-two interviewed bought it. The eight who did not, included two in the far north-west of the area who took the Leduc Representative. One lived close to Bashaw and took the Bashaw Star with the Farm Weekly and The Producer, one took no weeklies at all (but did take a daily), one borrowed it and three had at least one member of the family working in Camrose and picking up a daily newspaper. The mail response was incomplete but 14 took the Canadian compared with ten taking the Farm Weekly. Thus only in three cases did location explain non-subscription and even in those areas some respondents took the Canadian.

Total sales are 4858 of which 65.2% are sold by mail and the rest by dealers - 1675 by dealers in Camrose. 3391 were sold in CD 10, 512 in CD 7 adjacent to the county in Daysland, Donalda, Forestburg, Heisler and Strome. Another 211 were sold in Edmonton, 55 in Wetaskiwin and 32 elsewhere in CD 7. The remaining 657 were sold elsewhere in Alberta, other parts of Canada and U.S. and abroad i.e. over 12% far outside the normal trade area.

Within the thesis area percentages of post office patrons sub-

scribing fluctuate greatly. In Kingman 72.4% subscribe but in Bashaw only 5%. Ferintosh has low sales possibly due to the counter attraction of the Bashaw Star as does Hay Lakes because of the Leduc paper. Bittern Lake and Camrose rural routes have low figures probably because many buy from dealers in Camrose.

Rendall studied the distribution of subscribers to the Canadian and mapped them (Rendall 1962). He noted that it was only possible to map 68% of the subscribers, ignoring those listed as Camrose. Considering that there were about 130 general delivery patrons at Camrose and 160 Camrose rural delivery patrons as well as those living close enough to buy from dealers, his map tends to give an exaggerated impression of precision and for this reason no attempt was made to duplicate it. This even makes his assertion that the peak sales areas corresponded with the limits of the primary trade area rather doubtful.

The editor considers his newspaper mainly serves rural subscribers though he is not a rural dweller himself. Most of the correspondents live in the county but advertising originates as far away as Vegreville. The circulation has risen during the last 20 years and with high school columns the interest of the younger generation is maintained.

The paper is published on Wednesday and is available at post offices by Friday or Saturday, though sometimes it does not reach Edberg until Monday. Thus, because of the means of delivery the Canadian publisher is as far removed in time from his customers as is the publisher of the Farm Weekly which is also published on Wednesday.

The sales area shows a sharp cut off at the Wetaskiwin county

boundary but none in the east. This reflects the presence of the Wetaskiwin Times in the West but no competition in the east. It also reflects a greater community of interest towards the east with more grain growing while in the west cattle are more important.

The Camrose Booster is an advertising paper of 4768 total circulation. Only 52 are paid for, the rest being distributed free. It carries the local government announcements which the Canadian prefers not to carry as the contract is felt to cause a loss of independence and an unwillingness to criticise the county (which in turn would lose sales). Only seven persons interviewed considered the Booster a newspaper and one of these referred to it as an advertising sheet so it was not considered in the survey. Only four respondents bought the Bashaw Star but it is worth noting as an example of very small-scale publishing. It has a circulation of 970. This is by no means the smallest of the 91 weeklies in Alberta - the Coleman Journal has only 500, the Okotoks Review 510 and the Irma Times 517. It is owned, edited and printed by one man who operates a general printing business which is complementary to the newspaper. He maintained that is made a profit but it seemed likely that he would publish regardless. Like the editor of the Canadian he felt that the local government contract would be inhibiting and could reduce sales.

The claimed sales area is twelve miles north of the town, fifteen miles west, twenty-one miles south and eighteen miles east - a bias towards the south-east reflecting the full name Bashaw Star and Alex Promoter. The town of Bashaw is the chief sales area with 343, followed by 72 on R.R.s Bashaw, 23 in Camrose, 18 at Melting Creek, 10

on Ferintosh R.R.1 and 9 in Ferintosh. However, sales outside the county and beyond in Edmonton and Calgary account for 307.

The editor claimed that most people in the area read the paper and that most wanted purely local news, births, deaths, visits etc. He sometimes discussed larger issues in the editorials but Bush and Teilhet (1942) observed that only two men in five and one woman in five reads editorials. Even a small newspaper like this uses 22 local correspondents to supply news.

The habit of buying weekly newspapers seems strongly implanted in the area. Only one person interviewed did not and besides he bought a daily every day. Of the mail respondents five did not buy weeklies but only one bought none at all, the others all buying dailies.

Only three persons bought other types of weekly, one bought Time, another Life, and another the Financial Post. However, it is possible that others did but did not consider them newspapers. As the local post masters are usually subscription agents the choice is likely to depend on them as much as any other factor, and their salesmanship is possibly a major factor in sales of even the well-established weeklies.

The Daily Newspaper

Park's work on newspapers (Park 1929) was based on daily newspapers in the Chicago area and showed quite large numbers bought in small towns. Bush and Teilhet found that 64% of Wisconsin farm homes subscribed to a daily newspaper (Bush and Teilhet 1942). Fuller noted that rural mail delivery encouraged daily newspaper sales.

Within the thesis area two daily newspapers are sold, the Ed-

monton Journal, an evening paper, and the Calgary Albertan - a morning paper. In practice the Journal is by far the most important because it is an evening paper. By being published in the afternoon it covers most of the day's news and can be despatched by Greyhound bus in time to be sold and privately delivered in Camrose and it is also available in some local shops, cafés and hotels in the county, the evening of publication. It is also published in time to reach the post offices through the mails by the following morning for collection or rural delivery. The Albertan is published late the previous night, too late to arrive by mail on the morning which it is dated. Thus the news is older than the Journal when it arrives. Also its news relates dominantly to Southern Alberta which makes it less attractive. The Calgary Herald is an evening paper published by the same company as the Journal and has very few sales in the area. The Red Deer Advocate is published quite close to the area but is of little local interest and no respondents or postmasters mentioned it.

Only two respondents listed the Albertan as their daily newspaper and one was an interviewee who considered himself unusual for buying it. He was also the most southerly person interviewed i.e. the farthest from Edmonton. Thus it is assumed that all others listing merely a 'daily' take the Journal.

Among respondents 44 out of 95 i.e. 46.31% took daily newspapers of whom 19 specified the Journal, two the Albertan and 23 left unspecified (all in mail responses). The overall figure is, if anything, rather higher than might be expected for the county as a whole from the subscription and overall circulation figures but there are

several discrepancies which make estimation difficult.

Two sets of figures are available from the Journal - The subscription i.e. mail sales figures, and the Audit Bureau of Circulation (A.B.C.) figures. The former count all mail subscribers whether they buy only one issue per week or all issues, while the latter counts average daily sales regardless of outlet. If a person buys only one issue per week it will count as 1/6 daily sale. Within the thesis area there are about 1735 subscription sales and 1626 A.B.A. sales (the figures are approximate because they are based on post office addresses). Also these figures include the city of Camrose. Both figures are misleading. The A.B.C. figure is higher for Camrose because people having 'out of town' postal addresses buy there and there are considerable casual sales but there is no way of distinguishing how many. Kelsey, one of the smallest hamlets in the area has a high A.B.C. figure because it has a café where papers are sold. The discrepancies may not seem much in absolute terms but considering the small numbers of persons in each post office district the percentage difference may be great e.g. Ferintosh has 21.3% readership on subscription but only 2.6% on A.B.C. Allied to this is the fact that, because of the small numbers involved, the A.B.C. figures may not be precise.

It must be concluded that, for overall sales patterns in rural areas for newspapers not distributed totally by mail, the available figures are of doubtful value.

It was decided to investigate Park's statement that circulation would fall off in zones around the city of publication, though using survey data rather than his system of counting sales in centres taking

TABLE XIV - SUBSCRIPTION AND AUDIT BUREAU OF CIRCULATION FIGURES
FOR THE EDMONTON JOURNAL

P.O.	SUBSCRIPTION	A.B.C	SUB - A.B.C.
Armena	8	6	2
Bashaw	131	121	10
Bawlf	44	38	6
Bittern Lake	4	4	0
Camrose	1296	1332	-36
Edberg	28	6	22
Ferintosh	41	5	36
Hay Lakes	40	35	5
Kelsey	15	16	-1
Kingman	13	13	0
Meeting Creek	16	3	13
New Norway	41	41	0
Ohaton	25	7	18
Rosalind	34	15	19
Round Hill	7	7	0
	<hr/> 1743	<hr/> 1649	

Source: The Edmonton Journal

more than twenty-five copies. Concentric annular zones were plotted around Edmonton at ten mile intervals with a zone being given the distance value of its median distance. The numbers of respondents taking the Journal were then plotted as a percentage of all respondents in each zone. The results were as shown in Fig. 16.

TABLE XV - READERSHIP OF THE JOURNAL/DISTANCE FROM EDMONTON

ZONE (MILES)	EDMONTON JOURNALS	TOTAL	% RESPONDENTS
30	5	14	35.71
40	11	20	55.00
50	8	15	53.33
60	14	22	66.63
70	4	22	18.18
	<u>42</u>	<u>93</u>	

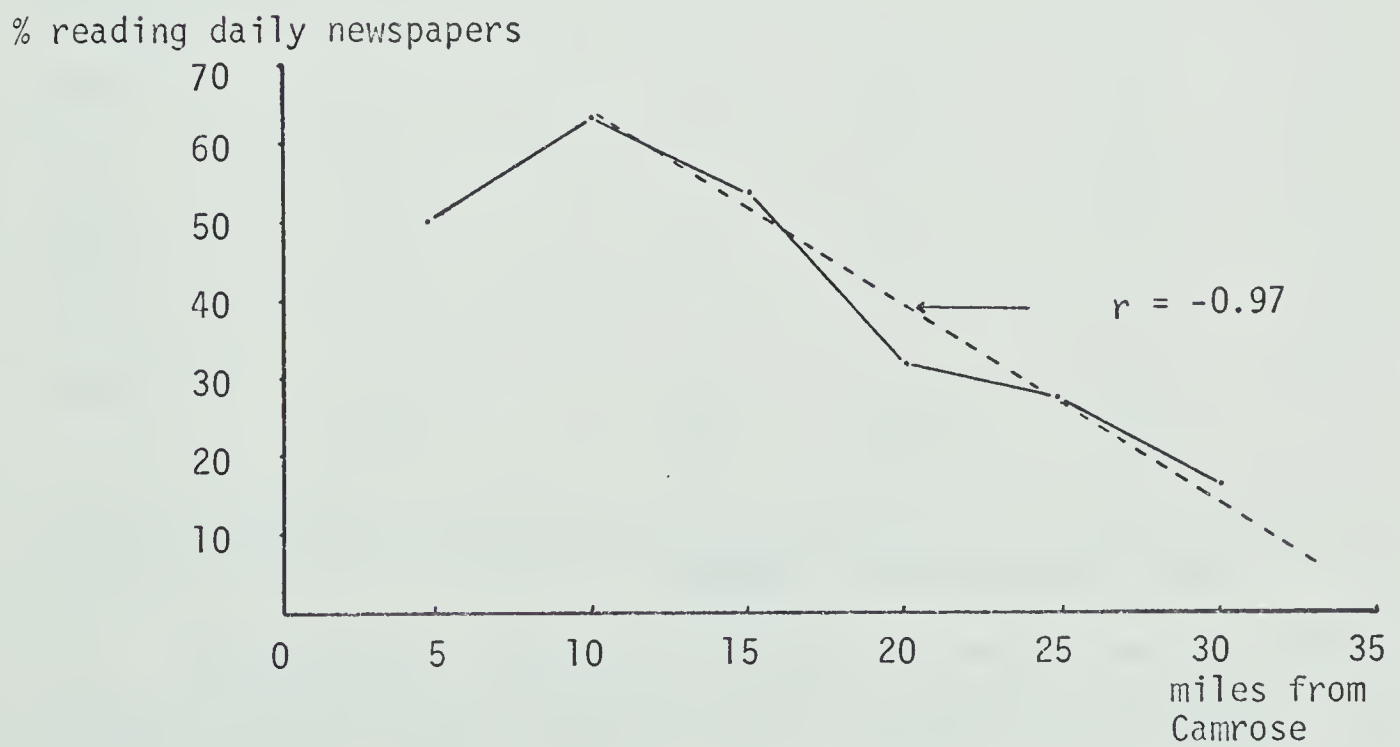
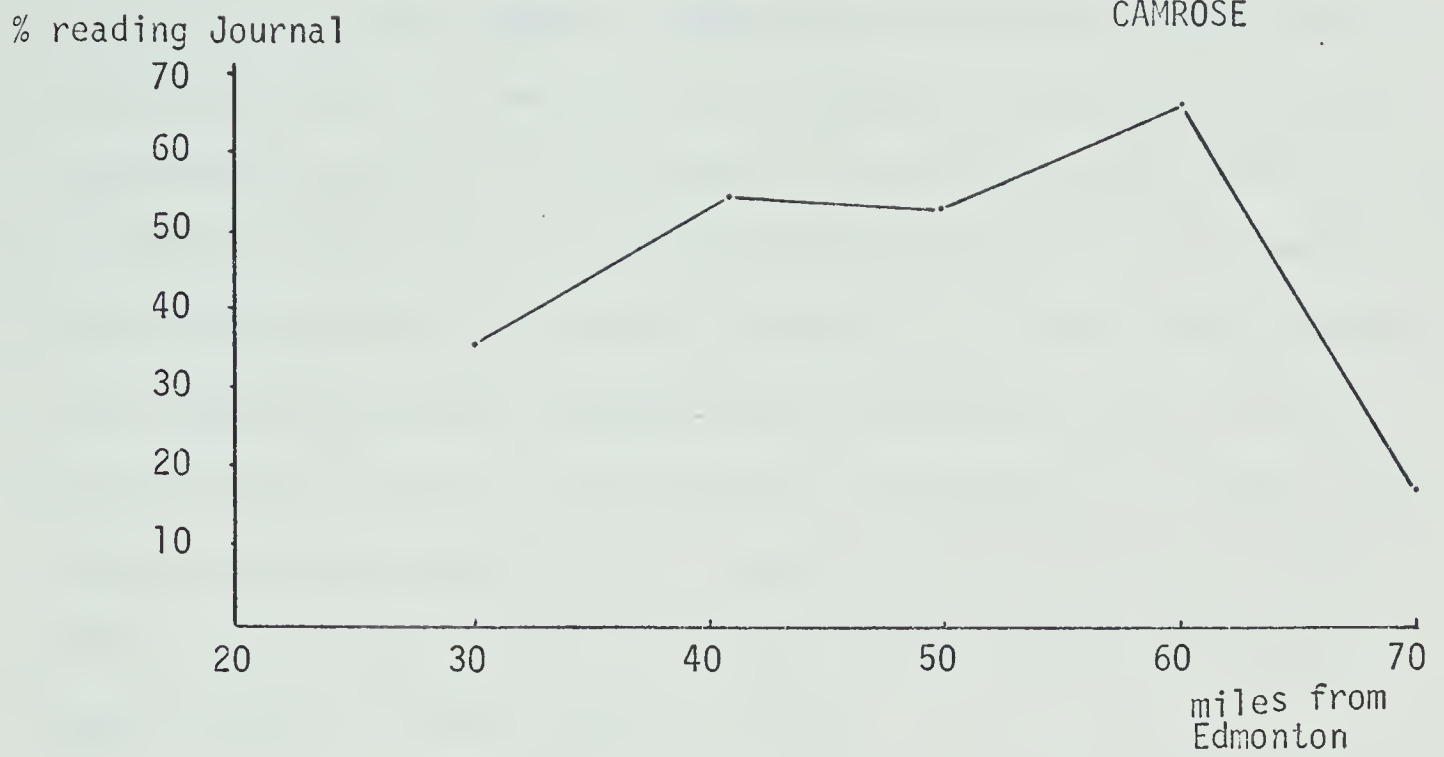
The sales of the Albertan were ignored for this table.

From this it can be seen that there is no regular fall off with distance - in fact the opposite is nearer the truth, As Camrose falls in the 50 mile zone with increases on either side it was decided to examine the relationship between readership and distance from Camrose. As total readership was involved the Albertan readers were included.

The distribution is as shown in Fig. 16 with its 'volcano section' shape except for the 35 mile zone. This can be ignored because it is a small area south of Bashaw and it only contained one interviewee (who was the person who likes to be 'different'). Taking the rest there is a -0.87 correlation between distance and percentage readership i.e. 76% explanation. If percentage is correlated with (distance)² there is

FIGURE 16

READERSHIP OF THE
EDMONTON JOURNAL/
DISTANCE FROM
EDMONTON AND
CAMROSE



Source:- Questionnaire Data

a -0.91 correlation i.e. 83% explanation. These correlations would, in themselves show a significant fall off with distance from a locally important urban centre. However, there were substantial similarities between the curve and that for radio listening so the results were discussed with the editor of the Canadian. He felt that the 'crater' in the centre near Camrose was not accidental and that people in and immediately around the city did not read daily newspapers. He felt it was reprehensible that so many city businessmen made no effort to remain in touch with the outside world. He thought that an explanation of higher readership outside could be due to the fact that they were close enough to work in the city and pick up the Journal but far enough out to stay there at night and want something to read.

TABLE XVI - DAILY NEWSPAPER READERSHIP BY DISTANCE FROM CAMROSE

ZONE	JOURNAL	ALBERTAN	TOTAL DAILY	TOTAL IN ZONE	%
5 mile	4	-	4	8	50
10 "	14	-	14	22	63.66
15 "	14	1	15	28	53.37
20 "	6	-	6	19	31.58
25 "	3	-	3	11	27.27
30 "	1	-	1	6	16.66
35 "	-	1	1	1	100
	<u>42</u>	<u>2</u>	<u>44</u>	<u>95</u>	

Source: Questionnaire data

Accordingly, correlation analysis for Camrose was made ignoring the five mile zone and a -0.97 i.e. 95% explanation was obtained. For

(distance)², the figure was -0.95 i.e. 90% explanation. These figures would indicate that there is a definite decline of readership with distance from the city of Camrose rather than Edmonton - possibly an index of urban influence. Areas within 30 miles of Edmonton thus have similar readership to those 70 miles away, thus disproving Park's theory.

The method of obtaining the daily newspaper is of interest. Seventeen obtained it by mail, nine collected it in town, seven at a local shop, six private delivery (e.g. by neighbour) and four unspecified. Of the private delivery two borrowed it from relatives. A semantic ambiguity occurs with the use of the word 'town'. Some, especially older people, think of the nearest hamlet as town, while others reserve it for Camrose or Bashaw.

Fuller, in his study of rural free delivery in U.S.A. noted that in Nebraska in 1921 and Missouri in 1928 almost three quarters of the farmers took daily newspapers and in Missouri one third of all families took two (Fuller 1964, p. 295). He ascribed this to rural free delivery as those areas without routes had fewer readers.

Such is not the case in the Camrose area. Only five persons obtaining the newspaper by mail were on rural routes. Three on rural routes collected it in town and one each at local shops and by private delivery.

The reason for this is found in the differing structure of rural mail delivery in the United States and Canada. In the United States it is usually a daily service while in Canada it is usually only tri-weekly. Also, as noted before, the publishing times and mail collection times do not coincide in Canada while they do in the United States. While the

Post Office in Canada does not positively discourage newspaper sales (it permits its postmasters to be subscription agents) it does not encourage them, because it loses money on second class mail.

An analysis of percentage on post office lists buying newspapers by subscriptions shows a positive correlation with distance from Edmonton of 0.71 and 0.74 with (distance)². For Camrose the figures are 0.67 and 0.64 respectively.

In some respects it may be a misnomer to call the Journal a 'daily'. While nineteen respondents bought all issues, thirteen bought weekend issues only and nine bought at other intervals (three when they went to town, one at weekends, two tri-weekly and three unspecified). Three living in hamlets bought at unspecified intervals.

The time lag between publication and receipt of a newspaper may be an excellent indication of isolation. Sixteen received it on the day of publication, sixteen on the second day, nine after three days, two after four days and two unspecified. Thus the majority do not receive it while the news is recent and so it cannot compete for immediacy with radio and television, several respondents noting that they read newspapers for 'depth'. However, it does seem unusual that people living so close to a large city should be so 'removed' from the news.

An attempt was made to discover the reasons for buying newspapers, largely in terms of areas of interest. The major reply was farm news with 59 responses (low in view of the fact that 81 respondents lived on farms). World news followed closely at 57, which is rather high considering that only 41 read daily newspapers. Local news rated 49 responses and only 34 and 36 noted Albertan and Canadian news

respectively, interviewees having indicated that radio and television were satisfactory in this respect. County news only received 33 responses showing that people did not think much in terms of the administrative unit. Only 31 listed others, including 2 sports, 2 advertisements and 6 home making. Seventeen listed all seven reasons and five indicated the first six showing that many people read the papers from cover to cover as noted by several interviewees.

In general, it may be seen that newspapers provide information at a very local and world levels with relatively little between. Readership of some kind is almost universal but daily newspapers depend greatly on a distance factor so that by 35 miles from a major town very few read them. This is due partly to postal services and lack of public transport but it seems likely that something more diffuse like 'urban feeling' is the main factor.

CHAPTER VI

RADIO AND TELEVISION

The object of this chapter is similar to that on newspapers. it is to examine the sources of the media and patterns of use within the thesis area.

Radio coverage is ubiquitous in the Province of Alberta. Since 1954 the number of households without radios has fluctuated between 8,000 and 14,000 (Canada D.B.S. 1969). As these figures are estimates and the fluctuation is within the errors of estimate it is likely that they relate almost entirely to persons who do not want radios rather than those who cannot receive signals.

Television has increased from negligible recorded households in Alberta in 1954 to 379,000 in 1968 leaving only 33,000 with no television. The latter figure has been levelling off and may be due largely to the small proportion for whom television reception is impossible. In 1965 national network coverage was available to 88 per cent of Albertan population (Canada 1965, p. 63) and is probably higher now. C.B.C. policy regards any community of 2,000 or more as eligible for television (compared with 500 for radio) so that most of the province will eventually be served by relay stations.

Three mechanical factors have major influence on television coverage:-

- a. Television signals travel in straight lines and hence are limited in range especially in rugged terrain.
- b. Attenuation or diminishing of signal strength is more rapid

and more critical to reception than in the case of radio.

c. Battery operated television sets are less satisfactory than similar radio sets because of much higher consumption of current and greater sensitivity to voltage change, so that reception may be limited to areas with mains electricity.

Radio and television are the most space filling and instantaneous of media. The individual only has to have a radio or television set to avail himself of the facilities. No area can be isolated in terms of time and for most of Alberta the only isolation may be in terms of choice of station.

The Literature

Like the press, radio and television have been extensively studied from the standpoint of quality, content and influence, by Schramm, McLuhan and Williams as noted in the previous chapter. Also they have been studied by psychologists, especially with reference to television viewing by children. Governmental involvement with broadcasting is much greater than with the press and studies have been made by Royal Commissions in Canada in 1957 and 1965.

Only four authors appear in the geographical literature concerning radio and television.

Donald Q. Innis published three articles (Innis, 1953, 1954 and 1960). In his 1953 paper Innis maps the radio stations in Canada and points out that the large cities and densely populated agglomerations of Ontario have fewer high powered stations than in the west because of interference from each other and the nearby U.S. stations. He examines the sizes of towns with radio stations and notes that smaller centres have radio stations, of low power, in British Columbia than

elsewhere. This is because a high power station would merely waste most of its signal strength against the mountains while most of the people live in the valleys. Thus terrain may influence the number and power of stations. In his 1954 paper he discussed the effects of the extent of the medium wave-band from 540-1600 Kc which permits 106 channels of the mandatory 10 Kc width. This limitation to prevent interference resulted, in the United States, in one station serving 18,000 people in Nevada with a low population density while the eight eastern states had one station per 112,000 people, New York state one per 148,000 and New Jersey one per 250,000. He concluded that 'the distribution of radio stations is affected more by the space filling characteristics of radio waves than by the distribution of population' (p. 86).

In his 1960 paper Innis set out to examine radio and television in the United States but analysed considerable data for the rest of the world for comparison. He noted that, while saturation of the waveband had been reached in much of the United States, such was not the case in Europe because radio there was generally a government monopoly. However, interference was a frequently cited reason for suppressing the 'pirate' radio stations of 1965-67. He mapped radio stations on the 1530 Kc channel and showed that, to prevent interference, only three 50,000 watt stations were permitted, in Corpus Christi, Cincinnati and Sacramento, compared with 120 at 250 watts in all states.

Cotcher (1948) discussed the technical limitations on signal strengths and station locations for Boston, Massachusetts. The compromises necessary to permit stations to serve both rural and urban areas without causing interference or navigational hazard are discussed in the light of physical influences on signal strength. However,

he does not consider the effects of these signal strengths on the listening habits of the population.

Robertson (1952) is chiefly concerned with international differences, and notes that there are more difficulties with interference in Europe, because of different nationalities and languages involved, than in North America. This seems doubtful.

Hardwich (1967) used television viewing habits in the Vancouver area as an index of Canadian national consciousness and his interest was in political geography rather than communications.

Cazeneuve's study (1965) was mainly concerned with survey methodology but it discussed some rural urban differences. However, these mainly related to France with a social and economic system which made comparisons with Canada of doubtful value.

Legal and Physical Limitations

In the same way that the early newspapers were subject to stringent governmental control, radio was originally strictly controlled. This was necessary at an international level when early spark transmitters used great power over wide wavebands because of primitive receivers. Interference could easily block emergency messages therefore restrictions were imposed. With the growth of broadcasting, most countries made transmitting a government monopoly. In North America, regulations, in practice, extended little beyond allocation of channels, regulation of permitted power and direction of beaming of signals, and location of stations. There are absolute physical limits to the number of channels, unlike the case of newspapers, where the postal service could, in theory at least, always be expanded.

Some general principles exist:-

1. Strength of transmission signal - generally this rises with wattage but signals are often beamed so that most of the power goes in one direction. Many stations in Canada have to beam north to avoid interfering with U.S. Stations.

2. Strength of received signal - this is measured in millivolts per metre and the requirement varies somewhat with the type of receiver. In urban areas with much interference from auto ignition systems and machinery 25 mv/m may be necessary while in rural areas 0.5 mv/m may suffice. A signal of 250 mv/m or more can damage receivers, therefore, most transmitters cannot be located too close to their service areas eg. at city centres. Thus, most Edmonton transmitters are located outside the city.

3. High frequencies result in increased attenuation i.e. greater decline of signal strength. A station at the 1600 Kc end of the waveband will require considerably more power than one at the 550 Kc end for the same signal strength. CHED Edmonton arranged an exchange of wavelengths with a U.S. station to gain its present 630 Kc Channel.

4. The ground wave i.e. the signal passing through the ground, is more dependable than that passing through the air so that the composition of the first 50 ft. depth of ground has a major influence on reception as can be seen from the table below.

5. Signals travel further at night, therefore, many stations have to operate on reduced power at night or on a different beam to avoid interference. In some cases this may result in poorer reception at night than in daytime.

TABLE XVII - THE INFLUENCE OF TERRAIN ON RADIO SIGNALS

TERRAIN	RELATIVE SIGNAL CARRYING ABILITY
Sea water	100
Pastoral: low hills, rich soil	17 to 50
Pastoral: medium hills, forestation	7
Flat, marshy, densely wooded	13
Rocky soil, steep hills	2.5
Flat, dry, sandy	2.4
Cities, industrial areas	0.3 to 1.1

Source: Cotcher p. 274

The Thesis Area

Only two respondents had no radio and five had no television. Of those without radio, one was interviewed and merely stated that he did not approve of it. The other respondent lived nearby and as there are many Mennonites in the area whose religious beliefs do not permit the use of radio and television for entertainment, religion is a likely explanation. The rider 'for entertainment' is necessary because at least one member of this faith in the area is said to have a closed circuit television system to watch his broiler chickens. Of the respondents without television, two were those who had no radio, one did not have one at present (presumably due to breakdown), one in interview stated that times were bad, and the other respondent seemed to be old and possibly could not afford one. The latter also lived in a deep valley where a large antenna was necessary for good reception.

The area falls well within the .25 mv/m contour for all the

Edmonton radio stations day and night (though personal experience suggests that this signal strength may be too weak for battery radios as it extends to near Calgary for 10 kw stations). It also lies within the area of CFCW Camrose and CKRD Red Deer (though the latter is weak at night because the power is reduced from 10 kw to 1 kw).

The stations are as shown in Table XVIII.

TABLE XVIII - RADIO STATIONS SERVING THE THESIS AREA

STATION		FREQUENCY	POWER (WATTS)
CBX	Edmonton	740 kc	50,000 D & N
CFRN	"	1260 kc	50,000 D & N
-FM	"	100.3 mc	16,200
CHED	"	630 kc	10,000 D & N
CHQT	"	1110 kc	10,000 D & N
CKUA	"	580 kc	10,000 D & N
-FM	"	98.1 mc	352
CJCA	"	930 kc	10,000 D 5,000 N
-FM		99.5 mc	414
CFCW	Camrose	790 kc	10,000 D & N
CKRD	Red Deer	850 kc	10,000 D 1,000 N
-FM		98.9 mc	1,240

D = day Source: Dept. of Transport
 N = night List of Broadcasting
 Stations in Canada 1967.

For radio no figures exist quite comparable to newspaper circulation figures. The Bureau of Broadcast Measurement is a private agency which carried out mail surveys similar to the Audit Bureau of Circulation but based on census districts rather than post offices.

The results are published in a confidential fortnightly which is only available to radio stations and potential advertisers. It provides data on the types of persons listening to stations and the numbers listening at given times so that advertising rates may be set.

For the western half of CD 10 which includes the thesis area the weekly listening figures are as shown in Table XIX based on the 1966 Census figures.

These figures are arranged in order of total hours listened to. Thus, while CBX is listened to by fewer people than CHQT those who do, listen for so long that they far outweigh CHQT.

Translated into daily figures, on any given day the listeners are as indicated below.

TABLE XIX - RADIO LISTENERS IN WESTERN CD 10 (DAILY)

STATION	NIGHT			DAY		
CFCW	7%	1.1	hrs.	21%	1.8	hrs.
CJCA	6%	1.2	"	19%	1.9	"
CHED	5%	1.8	"	17%	1.9	"
CFRN	4%	1.4	"	9%	2.1	"
CBX	2%	0.9	"	3%	2.5	"
CHQT	2%	1.3	"	4%	1.4	"

Source: The Bureau of Broadcast Measurement - November 6 - 19, 1968.

Thus, while 37% of the total population listen to CFCW for an average of 8.1 hours during a week, on any given day only 21% listen for a period of 1.8 hours.

TABLE XX - RADIO LISTENERS IN WESTERN CD 10 (WEEKLY)

STATION	MEN 18+		WOMEN 18+		TEENAGERS (12-17)		CHILDREN	
	No. (%)	Hours	No. (%)	Hours	No. (%)	Hours	No. (%)	Hours
Total	9975 (74)	8.9	11,448 (93)	20.4	4997 (86)	12.0	2545 (28)	6.9
CFCW	5400 (40)	9.8	6900 (56)	8.7	2000 (34)	2.9	200 (11)	5.2
CJCA	6200 (46)	5.2	7000 (57)	10.9	2200 (38)	2.9	1100 (12)	4.2
CHED	3400 (25)	11.6	3800 (31)	9.2	4200 (73)	10.1	500 (5)	1.8
CFRN	3200 (24)	8.1	3300 (27)	11.3	700 (11)	2.0	800 (9)	5.9
CBX	800 (6)	17.1	1400 (12)	8.9	400 (7)	2.0	200 (2)	8.0
CHQT	2400 (18)	7.0	1400 (11)	4.2	300 (5)	2.3	-	-
CKUA	500 (4)	3.4	600 (4)	1.3	-	-	-	-
CKRD	600 (4)	2.0	400 (3)	1.9	100 (2)	1.4	-	-

Source: The Bureau of Broadcast Measurement
November 6 - 19, 1968.

B.B.M. are at pains to point out that biases due to non-random response may affect the figures but with a minimum of 75 responses per demographic (age/sex) group this unlikely to be serious. An incentive payment is made for completed questionnaires.

The figures show that women and teenagers listen more than men in terms of percentage and hours of listening. However, while more individuals listen to CJCA than CFCW on a weekly basis, the CFCW listeners are more loyal in that they listen longer and are in a higher proportion on any given day. While CHED has a very strong hold on the teenagers with 73% for 10.1 hours per week the actual numbers involved are the closest for all age groups and more people over 18 listen than teenagers.

CFRN has the lowest proportion in the teenage and younger group except for CKUA for whom no figures are available.

CBX and CHQT have similar total hours of listening. CKUA and CKRD have about the same but only about 10% of CBX and CHQT.

These figures all relate to a much larger area than the thesis area and extending far to the east away from Edmonton, Camrose and Red Deer, the sites of radio stations.

While it is dangerous to generalise so quickly the main characteristics of the stations are as follows.

CFCW specialises in country and western music which attracts mainly older listeners even far from the station, so that western CD 10 is only sixth in total number of listeners. The station aims chiefly at farming areas in northern Alberta.

CJCA is mainly an urban station but which aims at listeners

in their twenties and over with a mixture of pop music and features.

CHED is a specialised pop radio station aiming mainly at teenagers and young adults but with increasing numbers of older listeners.

CFRN aims at older listeners than CJCA with considerable coverage of farm prices. Its program is somewhat more varied than CFCW which aims at a similar group.

CBX, CHQT and CKUA have somewhat similar content aiming at quality rather than large audiences.

CKRD is a rural local station with the benefit of a larger nearby audience than CFCW. It is also helped by distance from Edmonton but its similar musical content to Edmonton stations restricts its attraction to a small area. It suffers from a severe night-time power restriction.

Thus the listener habits are partially explicable by considering the types of stations. However, for the specific thesis area it was necessary to use questionnaire data, and this was also necessary to study spatial differences on a small scale not shown by the B.B.M. survey. Such detailed examination of average hours could not be attempted but the relative importance of the stations could be assessed.

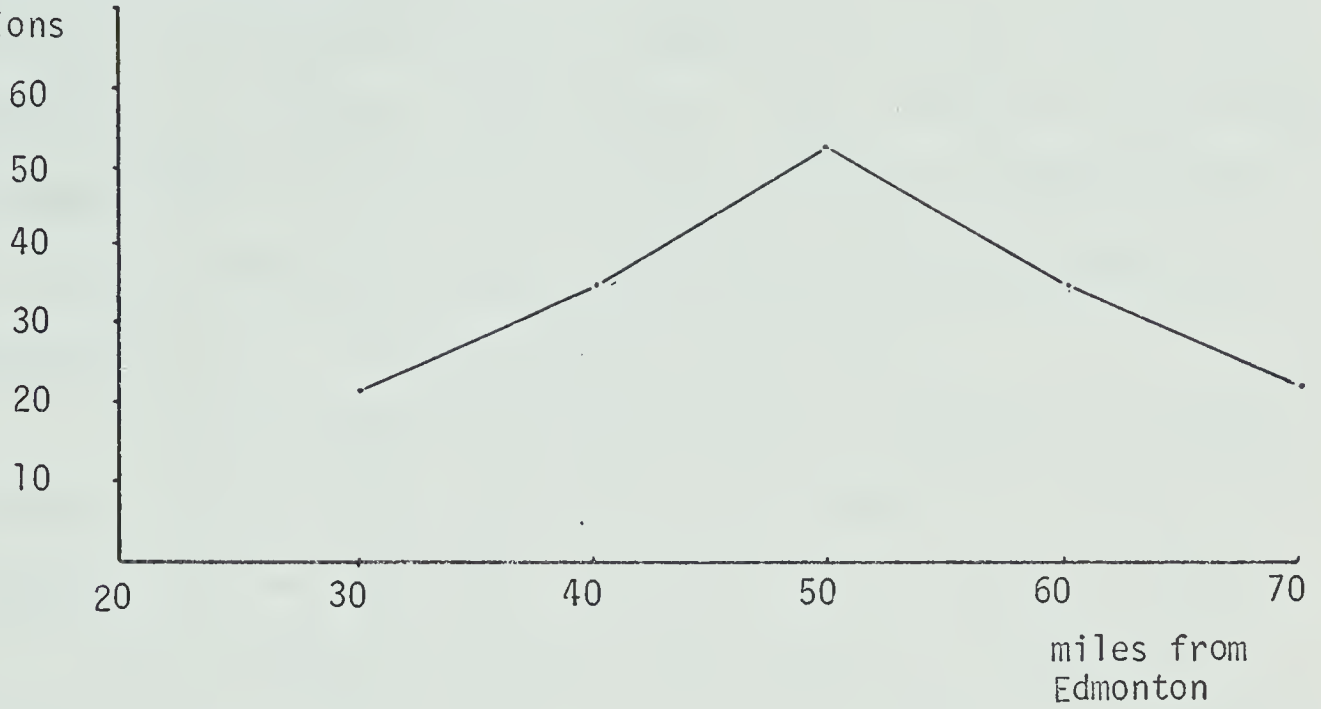
The respondents were asked which stations they or their families listened to, in order of frequency. The results are as tabulated in Table XXI.

Of the 59 listing CFCW as first choice, nine listened only to that station. Only nine did not mention CFCW at all. Five of those mentioning CKRD listed CFCW as their first choice as they were mainly

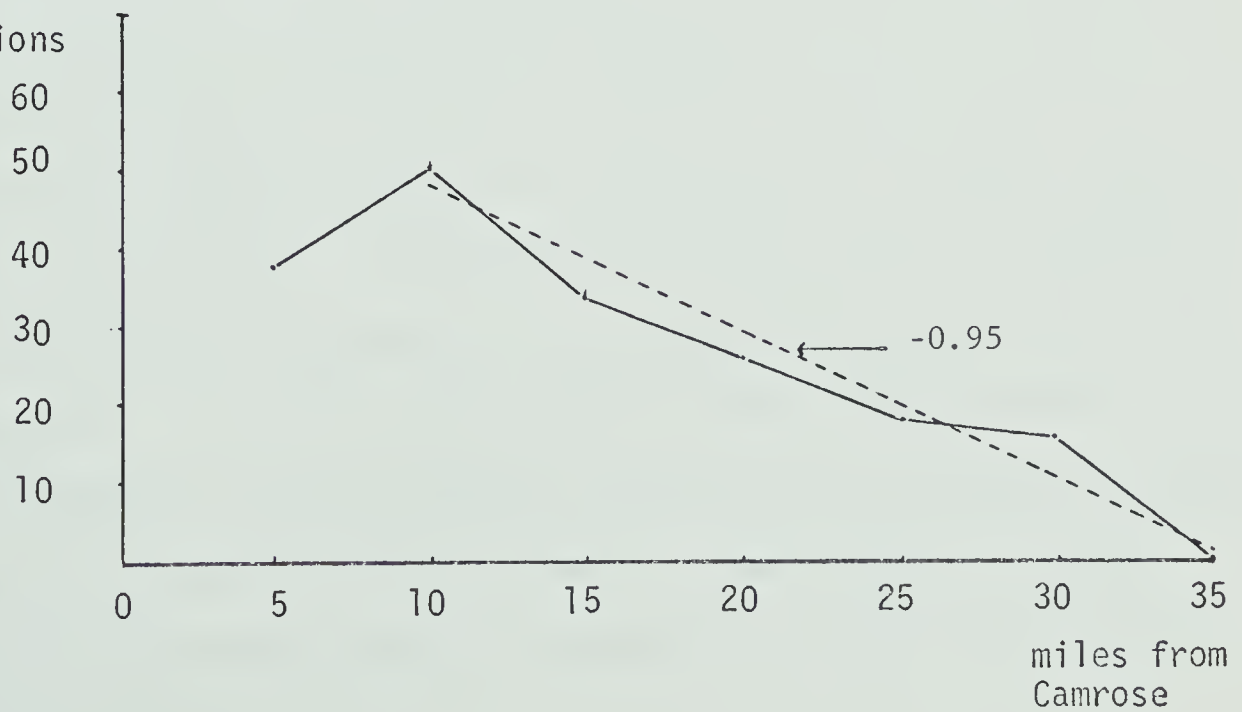
FIGURE 17

PERCENTAGE LISTENERS
TO EDMONTON STATIONS/
DISTANCE FROM
EDMONTON AND CAMROSE

% listening to Edmonton
stations



% listening to Edmonton
stations



Source: Questionnaire Data

in the south i.e. with connections with both Camrose and Red Deer. The majority, 81, listened to two stations and 42 listened to at least three. These figures are quite similar to those by the B.B.M. and show that, while local radio is the most popular as the first choice other stations are very popular second choices. Most respondents interviewed noted that CHED was popular with children. Those interviewed who did not listen to CFCW stated that it was because they did not like the music rather than a lack of interest in local news.

The relationship between proportions of respondents listening to Edmonton radio stations and distance from Edmonton and Camrose was studied in the same way as for newspapers with very similar results.

The percentages by distance from Edmonton of those with an Edmonton station as first choice are as shown in Fig. 17 i.e. with a maximum in the zone closest to Camrose.

Taking zones from Camrose the figures are as shown in Fig. 17. As can be seen the characteristics are almost identical to those for daily newspapers. The correlations obtained using all the zones are -0.87 correlating for distance and -0.88 for distance squared. If the first term is ignored because it is likely that a very high proportion in the city of Camrose listens because of city news the coefficients are -0.95 and -0.90 respectively i.e. giving 90% and 81% explanation respectively. Thus it is likely that the same nebulous urban feeling is in operation. This is further indicated by the fact that a similar analysis of those who listen to Edmonton radio stations, and also read daily newspapers, shows a correlation of -0.195 between percentage and distance.

TABLE XXI - STATION PREFERENCES IN THE THESIS AREA

ORDER	CFCW	CFRN	CJCA	CHED	CBX	CKRD	CHQT
1	59	11	15	2	2	0	1
2	15	12	17	25	2	8	2
3	6	7	12	10	2	4	1

Source: Questionnaire Data

In an attempt to find out whether this system was related to reception difficulties the respondents were asked whether their choice of station was influenced by reception. Twenty-nine felt that it was, but they were almost uniformly distributed. As could be seen from Cotcher's table, the area should have good reception overall because of depth of soil and this was borne out in interviews with radio technicians. It is significant that many interviewees noted that their children had reception difficulty with CHED. As most teenagers would use battery portable sets rather than mains sets, the difficulty is likely to be due more to run-down batteries than to weak signals. With an average listening time of 10.0 hours per week, batteries would not last long.

The reasons for listening to stations were examined and the results tabulated:-

TABLE XXII - REASONS FOR LISTENING TO RADIO STATIONS IN THE THESIS AREA

	CFCW	CFRN	CJCA	CHED	CBX	CKRD	CKUA	CHQT
Local news	76	9	7	2	2	2	-	-
Other news	28	20	25	2	5	2	-	-
Farm prices	52	10	2	1	3	3	-	-
Music	33	16	5	21	4	3		
also 1 CHQR Calgary for music								

Source: Questionnaire Data

The predominance of CFCW for local news is as expected. The high importance of other news on CJCA and CFRN is notable as it shows that people use different stations for specific features. The relatively low position of CFRN for farm prices is unexpected but several respondents noted that the announcers on that stations read the prices too quickly for farm wives to note them down while the farmers were in the fields. Music has proportions which could be expected from the programme content presented by the different stations.

The absence of other categories probably causes the low proportion indicating CJCA compared with the proportion indicating that they listen to it in previous tables. Open line discussions on this station are very popular.

Like the telephone there seems to be some reluctance to admit to listening by men, saying that it was a background for their wife's daily chores.

Television

With much less choice of channel than on radio the investigation was necessarily limited in scope.

Reception is good in the area as there are few hills, which are more critical than in the case of radio. The south and east edges of the area are somewhat marginal as sixty miles is a useful rule-of-thumb maximum for good reception. However, with outside antennae and boosters, reception is adequate apart from in the valley bottoms but few live there. Colour reception is said to be poor in the south.

Fifty-nine respondents watched both CBX and CTV Edmonton, fourteen watched CTV only and seven CBC only, largely a matter of

taste in programmes. Five in the far south and west watched CTV and CKRD in spite of needing a separate antenna for Red Deer which usually carries the same programmes as CBX except for news. It is closer but has a lower transmission power than the Edmonton station and several respondents could see no advantage in viewing it, or at least not enough to justify the expense of the extra antenna. Only two watched all three and only one CKRD only.

Fifty-three felt that there was enough local interest time, twenty six that there was not and eight has no opinion. This was surprisingly close to the figures for radio which were 58, 16 and 9 respectively. However, the answers do not mean quite the same in both cases. For radio there is considerable competition to provide local news so respondents' expectations were high. In the case of television many noted that they would like more local news but they realised that this would cut into entertainment time and they thought the compromise was adequate.

For non-local news, television is the chief source, many interviewees noting that they made a point of watching the 11 p.m. bulletin in spite of the fact that they found it inconveniently late if they had to get up early in the morning.

Conclusions

The physical limitations on radio seem to be relatively unimportant though the spatial location relative to Camrose is important. A curious inversion exists in comparing the scope of radio and television. Television has a shorter physical range yet it is much less localised in content because of network connections. McLuhan's observation that radio has become a 'kind of nervous information system' (McLuhan 1964, p. 298) since giving up much of its entertainment function to television, may be

true in urban areas, but in rural areas, where the local news may not relate to the listeners' area, entertainment is still important.

There is considerable difference in the uses of each radio station and respondents regularly tuned in to particular stations for different types of news and music. The importance of news on television is very great and this affects newspaper reading habits in that many buy daily newspapers for deeper study of news which they have first heard on television.

Radio and television are the major links between the rural areas and the rest of the country.

CHAPTER VII

SUMMARY AND CONCLUSIONS

In terms of overall presence of facilities for communications the area is not isolated. School transport is available for all outside the towns, villages and hamlets where the schools are located. All have access to postal services. 87.5% of the respondents had telephones. All received newspapers of some type. Only two respondents had no radio and five had no television. In this respect the same types of facilities are available as in the urban areas.

However, there is considerable qualitative isolation, i.e. the facilities are, in some cases, in an inferior form to urban areas.

The educational objections to small schools have been noted but these schools are being perpetuated in an attempt to minimise differences in travel times within the county. Thus the provision of travel facilities which are obviously equal for all is being used to hide the provision of educational facilities which are, less obviously, unequal.

Mail services are poor by urban standards, with only 33.7% of the respondents receiving mail delivery. Even those who do receive it may experience a two day delay compared with city dwellers. Yet, expectations are low, and for the rest a long journey to the post office is an accepted part of life. Postal officials really cannot be blamed for not improving facilities in the face of existing criticism of costs, in the area and elsewhere.

While telephones are very common they are largely of the multi-party type with relatively little privacy and some inconvenience. Even the new system being unstalled is not intended to be as good as

urban systems but it is welcomed as a great improvement. Again, the cost of a system comparable to cities would be very expensive.

Qualitative isolation in the case of newspapers means the lack of local relevance. Daily newspapers, in particular, seem to become less relevant with distance from an urban area as is shown by the decline of readership with distance from Camrose. Overall only 46.3% of respondents bought a daily newspaper. Weeklies cause qualitative isolation in the sense that relevance is only obtained at the expense of quality of journalism and lack of discussion of broad issues. Daily newspapers are written for immediate reading and suffer from a time lag of at least a day for 63.6% of those respondents subscribing. Weeklies suffer from the fact that most news discussed is too old.

Radio and television reflect the life of urban areas such as those in which they originated, in news, and, to a large extent, in features. This is reflected in the decline of listening to Edmonton, i.e. urban oriented, stations, with distance from Camrose. The area is fortunate in that it has a local radio station aimed specifically at a rural audience, which provides local weather reports and some local news, but its musical content is such as to reduce its appeal to many listeners. There is not the choice of combinations of entertainment and local news which is available in urban areas. In the case of television most of the respondents realised the difficulty of providing local service but it seems that the companies could make much more effort.

In this analysis the use of media was considered relative to the location of respondents. It is acknowledged that some additional

explanation might have been offered by relating the use of media to age, income, and other details of personal background. However, within the limitations of this study, sheer locational factors offered, in many cases, an adequate explanation. Marble's assertion (1967) that location had negligible effect compared with personal differences was not specifically tested but, in the thesis area at least, such a statement is too sweeping.

It must be concluded that, in terms of overall presence of facilities for communication, the area is not isolated, but it is in fact isolated in terms of the facilities available.

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DEPARTMENT OF GEOGRAPHY

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

6th February, 1969.

Dear Sir or Madam:

I am gathering information on communications in the County of Camrose for a Master of Science degree thesis in geography at the University of Alberta, Edmonton. I am hoping to find out how people in a rural area remain in contact with each other and with the rest of the country.

I have distributed about 200 questionnaires throughout the county to people chosen at random from the post office household directory. It would help me greatly if you could answer the enclosed questionnaire and send it back to me in the accompanying stamped addressed envelope.

Could you please give your location in terms of quarter, township and range and answer the other questions by circling the appropriate numbers. If, for any reason, you are uncertain of the meaning of a question could you draw a line through it so that I will know you have not just missed it by mistake.

As the Post Office lists are not arranged by counties you may not live within the County of Camrose. If this is the case could you simply write 'not in County' below your name and return the questionnaire unfinished.

Any information received will be treated in the strictest confidence and will not be used for any commercial purposes. I have no connection with any of the agencies whom the questions concern and I have received no financial aid from outside sources.

I would be grateful for any additional comments you may wish to make.



APPENDIX B

The format of this questionnaire has been changed to fit the thesis size.

The original was typed on two sheets of legal size.

CONFIDENTIAL

No.

QUESTIONNAIRE

1. Name -

2. Location -

Telephone

- | | | |
|---------------------------------|----------------|---------------------------|
| 3. Telephone | 1. Yes | 2. No |
| 4. Which exchange | 1. A.G.T. | 2. Mutual |
| 5. Outgoing are mainly | 1. Local | 2. Toll |
| 6. Incoming are mainly | 1. Local | 2. Toll |
| 7. Are toll calls mainly | | |
| 1. to | | |
| or 2. from one place | 1. | 2. |
| 8. Most frequent use of phone | 1. Social | 3. Repairs |
| | 2. Shops | 4. Others |
| 9. On average how often per day | 1. 0 - 5 calls | 3. 10 - 15 calls |
| is phone used | 2. 5 - 10 " | 4. 15 or more calls |
| 10. Who uses it most | 1. Man | 2. Woman 3. Children |

Rural Mail Delivery

- | | | |
|--|----------------------------|-------|
| 11. Do you have a rural mail delivery | 1. Yes | 2. No |
| 12. Do you regard it as an advantage to have a rural mail delivery | 1. Yes | 2. No |
| 13. If 'yes' would the mail service be significantly improved by | 1. More frequent delivery | |
| | 2. Earlier delivery in day | |
| | 3. Other | |
| 14. If you are not on a route where do you collect your mail | Specify | |
| 15. Why there | 1. Shopping | |
| | 2. Closest | |
| | 3. Other | |

16. If you are on a route and you also have a general delivery box how far away
1. Not applicable
 2. 0 - 5 miles
 3. 5 - 10 "
 4. 10 - 15 "
 5. 15 miles or more
17. What is your most important source of mail in terms of need (what did you miss most during strike)
1. Local
 2. Camrose
 3. Edmonton
 4. Alberta
 5. Other
18. Type of mail
1. Newspapers
 2. Letters
 3. Magazines
 4. Business

School Buses

19. Do you have any schoolchildren
- Specify:
1. School(s)
 2. Grade(s)
 3. Not applicable
20. What time do they have to get on the bus
- a.m.
21. Are you satisfied with the school bus services
1. Yes
 2. No
 3. No Opinion
22. If not why
1. Up too early
 2. Back too late
 3. Bad for schoolwork
 4. Inconvenient domestically
23. Do you think it matters
1. More
 2. Less as children get older
24. If it would shorten the journey time would you consider transporting children to
1. School
 2. Central pickup
 3. Main road

Radio and Television

25. Do you have a radio
1. Yes
 2. No
26. Which stations do you or your family listen to - if possible in order of frequency
- 1.
 - 2.
 - 3.
 4. Not applicable
27. Which station do you listen to for
1. Local news
 2. Other news
 3. Farm prices
 4. Music
28. Is your choice controlled to any extent by quality of reception
1. Yes
 2. No
29. Do you think that enough 'local interest' is given time on radio
1. Yes
 2. No
 3. No opinion
30. Do you have a T.V.
1. Yes
 2. No

31. Which station(s) do you view
- | | |
|-----------------------|-------------|
| 1. C.T.V. Edmonton | 3. Red Deer |
| 2. C.B.C. " | 4. Other |
32. Is there enough local news and information on T.V.
- | | | |
|--------|-------|---------------|
| 1. Yes | 2. No | 3. No opinion |
|--------|-------|---------------|

Newspapers

33. Do you buy any newspapers
- | | |
|--------|---------------------|
| Daily | Specify |
| How:- | 1. Mail |
| | 2. Collect at town |
| | 3. Local shop |
| | 4. Private delivery |
| | 5. Not applicable |
| Weekly | |
| How:- | 1. |
| | 2. |
| | 3. |
| | 4. |
| | 5. (as above) |
34. Daily papers - do you get
- | |
|-------------------|
| 1. All issues |
| 2. Week-ends only |
| 3. Others |
35. How old is it when you collect it
- | |
|-----------------------|
| 1. Day of publication |
| 2. 2 days |
| 3. 3 days |
| 4. 4 days |
| 5. older - specify |
36. Why do you buy newspapers
- | |
|---------------|
| 1. World news |
| 2. Canadian |
| 3. Alberta |
| 4. County |
| 5. Local |
| 6. Farm |
| 7. Other |

Overall

37. Do you feel more cut off living in the country than in town
- | | | |
|--------|-------|---------------|
| 1. Yes | 2. No | 3. No opinion |
|--------|-------|---------------|
38. Do you think communications are
- | |
|------------------|
| 1. Improving |
| 2. Getting worse |
| 3. Not changing |

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